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Police/Citizen Encounters: An Examination of Less Lethal Weapons, Their Effectiveness, and Officer Decision Making

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**Police/Citizen Encounters: An Examination of Less Lethal
Weapons, Their Effectiveness, and Officer Decision Making**

Police/Citizen Encounters: An Examination of Less Lethal
Weapons, Their Effectiveness, and Officer Decision Making

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy in Public Policy

by

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ABSTRACT

Law enforcement officers expect to be issued the most effective less lethal weapons to stop the escalation of force. At the same time, citizens expect law enforcement officers to utilize their training and skills to resolve situations with the least amount of force possible. This research project attempts to answer the following research questions: (1) What weapon, short of lethal force, is most effective in stopping the escalation of force? (2) What factors do officers take into account in choosing a particular weapon and why? The study results may assist local, state, and federal law enforcement agencies and policymakers in three ways: (1) inform them of the most effective less lethal weapons that stop the escalation of force; (2) make suggestions for policy revisions and develop new policies for less lethal equipment implementation; and (3) identify those decision making variables that officers use or do not use as part of their perceptual shorthand.

The focal concerns perspective and street-level bureaucrat theories guide the theoretical framework. The focal concerns perspective draws from Steffensmeier's work from the 1980's and expounds upon the work done by Skolnick (2011) by providing evidence of the factors that officers use as their perceptual shorthand. The research findings also build upon the street-level bureaucrat construct in that they show evidence of the high level of discretion each officer possesses when they are involved in a use of force incident.

Data are collected from a sample of 113 "Use of Force Reports." The method of force (weapon) was recorded for each suspect involved in the use of force incident. Also, the dependent variable, whether the method chosen was effective or ineffective, was recorded. A mixed methods approach using the convergent triangulation strategy is employed. The qualitative section employs semistructured interviews with officers.

The analysis suggests that two weapons, the TASER and hands-on tactics, were most effective in stopping the escalation of force. The qualitative analysis produces a list of factors that affect decision making including: age (only including the cases of extremely young or old), stature/condition of the suspect, call type, prior knowledge of the suspect, gender, and proximity. Recommendations for future research are also discussed.

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Finally, Conner, you were two years old when I started this endeavor and seven years later, I can see the joy and excitement in your eyes knowing that dad won't be studying in his office anymore. Wesley, you are four years old and have never known dad to not be in school. This is the beginning of a new chapter in our life. Thank you boys for being so patient and understanding while I accomplished my goal.

DEDICATION

To my wife, Heather, and my children, Conner and Wesley, who have always been supportive, loving, and patient with me while I pursued my degree. Also, to my parents and brothers who have always encouraged me throughout the many trials I have faced in life.

TABLE OF CONTENTS

	Page
CHAPTER I: INTRODUCTION.....	1
Context of the Problem	1
Statement of Purpose	4
Research Questions	5
Research Significance	5
<i>Practical and Policy Significance</i>	6
<i>Scholarly Significance</i>	6
Theoretical Framework	7
Research Design.....	8
Summary of Dissertation Chapters	8
 CHAPTER II: LITERATURE REVIEW	 10
Less Lethal Weaponry	10
<i>TASER</i>	11
<i>OC Spray</i>	12
<i>Expandable Baton</i>	13
<i>Hands-On Control Tactics</i>	14
Use of Force and Resulting Injuries.....	14
Officer Decision Making	16

Literature Concerning the Theoretical Framework.....	22
<i>Focal Concerns Perspective</i>	22
<i>Street-Level Bureaucrat</i>	24
Weakness in Knowledge Base	25
Summary	26
 CHAPTER III: RESEARCH DESIGN.....	 28
Research Questions and Hypotheses	29
Data and Samples.....	30
Limitations	31
Variables	32
<i>Dependent Variable and Measurement</i>	32
<i>Independent Variables and Measurement</i>	33
Methodology	35
Quantitative Research Methods	36
Qualitative Research Methods	37
<i>Grounded Theory, Postpositivism, and Case Study</i>	37
<i>Semistructured Interviews</i>	38
<i>Personal Documents</i>	39
Content Analysis.....	40
<i>Constant Comparative Method and Coding</i>	40

<i>Development of Grounded Theory</i>	42
Mixed Method Study	42
Summary	43
 CHAPTER IV: EMPIRICAL FINDINGS.....	44
Quantitative Research Findings	44
<i>Effectiveness in Stopping the Escalation of Force</i>	44
<i>Chi-Square and Lambda Values</i>	46
<i>Binomial Proportion Test</i>	48
Qualitative Research Findings	49
<i>Sample Selection Procedure</i>	49
Officer Interview Responses.....	50
<i>Officer Stable Traits</i>	50
<i>Less Lethal Weapons</i>	50
<i>Training: Weapons and Decision Making</i>	52
<i>Decision Making Factors</i>	52
Specific Use of Force Incident.....	53
<i>Officer 1- Report 101</i>	53
<i>Officer 2- Report 102</i>	54
<i>Officer 3- Report 103</i>	55
<i>Officer 4- Report 104</i>	55
<i>Officer 5- Report 105</i>	56

Development of Grounded Theory	56
Relating the Quantitative and Qualitative Findings.....	57
Hypothesis Validation/Non-Validation	58
Findings for Each Research Question.....	59
<i>Research Question One</i>	59
<i>Research Question Two</i>	60
Relating the Findings to Theory	61
Summary	61
 CHAPTER V: SUMMARY AND RECOMMENDATIONS	 63
Summary of the Research	63
Implications for Theory and Contributions to the Scholarly Literature	64
Policy Recommendations.....	67
Recommendations for Future Research	70
Summary	72
REFERENCES	75
APPENDIX A: DEFINITIONS.....	79
APPENDIX B: INTERVIEW GUIDE PROTOCOL	82
APPENDIX C: IRB APPROVAL	85

CHAPTER I

INTRODUCTION

Context of the Problem

Law enforcement officers make contact with the public many times in the course of their work. Using the Department of Justice's 2008 Police-Public Contact Survey, Eith and Durose (2011) found a total of 67 million interactions between the police and the public (U.S. residents age 16 or older). When these interactions occur, there is a possibility of threatened or actual use of force by the responding police officer. Specifically, the 2008 Police-Public Contact Survey data revealed that, of those contacts, 776,000 or 1.9% experienced force or the threat of force at least once (Eith and Durose, 2011).

According to the National Institute of Justice (2012), "Use of force describes the amount of effort required by police to compel compliance by an unwilling subject" (p. 1).¹ When a law enforcement officer uses force, regardless of how slight, there is always the possibility that injuries can occur to both the officer and the suspect (Smith et al., 2010). Smith et al. (2010) examined how and why injuries occur to police and citizens during use of force incidents and found a positive relationship between officer and suspect injury on one hand and increasing levels of suspect resistance on the other. Specifically, as the suspect's level of resistance increases, injuries to both the suspect and officer also increase. For the purpose of this study, a use of force incident is defined as an incident that occurs between a law enforcement officer(s) and a suspect(s) in which the officer(s) must use some sort of force to gain control of the

¹ This dissertation contains a number of terms that are defined in the text where they first appear. A complete list of definitions is provided in Appendix A.

situation or suspect. The Seattle Police Department (2010) also states, “There is greater chance of both suspect and officer injury when officers fail to meet suspect resistance with a greater amount of force” (p. 6). Additionally, Hougland, Mesloh, and Henych (2005) note, as an area of inquiry “use of force has tremendous implications for law enforcement officers and their agencies” (p. 24). Smith and Petrocelli (2002) argue, “The use of force by police continues to be an important social and public policy issue” (p. 201).

Because of its potential policy impact, use of force inquiry is a central topic of discussion and research in the criminal justice field. Hougland, Mesloh, and Henych (2005) point out that as a practice, use of force often affects public policy development and its administration. For instance, lawsuits filed against the police by the public are becoming more commonplace and are generally filed in one of five categories: (1) false arrest, (2) excessive force, (3) shootings, (4) wrongful death, and (5) federal civil rights violations (Hougland, Mesloh, and Henych, 2005).

Headlines and news stories claiming excessive use of force by police as well as calls for a better, less lethal, alternative are common in newspapers, television, and the Internet, and emphasize the prominence of this issue in mainstream media. This is especially the case following events in Ferguson, Missouri and other major cities at the end of 2014. Kingdon (2003) states, “The mass public’s attention to governmental issues tracks rather closely on media coverage of those issues” (p. 57). Hougland, Mesloh, and Henych (2005) claim:

As the perceived level of force increases, public support significantly decreases. This reiterates the supreme importance of the development of policy because it frequently comes under public scrutiny, more often than not as a result of a use-of-force incident.
(p. 26)

According to Mesloh, Wolf, Henych, and Thompson (2008), “In any given scenario, an officer is conditioned to react appropriately and to use the techniques acquired during training and the tools issued by the agency” (p. 133). Many law enforcement agencies provide weapons such as batons, oleoresin capsicum (OC) spray, and firearms but not TASERs as standard issue equipment, thus limiting an officer’s options for effectively preventing an escalation of force.² An escalation of force refers to the movement from one method of force to another when the initial method of force was unsuccessful. In a discussion surrounding the need for further research regarding the effectiveness of less lethal weapons and tactics, Alpert and Dunham (2000) claim, “It makes little sense to train officers in hand-to-hand tactics or the use of non-lethal weapons if they will ultimately be ineffective on the street or worse, cause unnecessary injuries” (p. v-11).

The amount of force that an officer chooses to exert will vary from situation to situation, and while there are guidelines regarding the appropriate use of force, there is no universally accepted set of rules (National Institute of Justice, 2012). That being considered, officers should use only the minimum amount of force necessary to arrest the suspect as well as to protect themselves and the public (National Institute of Justice, 2012). Incidents requiring force are relatively rare in citizen encounters, as previously stated by Eith and Durose (2011) only 1.9% of the 40 million people who had contact with the police experienced the threatened use or the actual use of force. However, when officers have to resort to using force, they need a less lethal tool to quickly bring the confrontation under control in a safe manner, thereby stopping further escalation of force.

² Formal definitions for baton, OC spray, and TASER can be found in the text in Chapter 2 and also in Appendix A.

This study explores which less lethal weapon is the most effective at stopping the escalation of force and the factors officers take into account when making use of force decisions. The knowledge gained from this research regarding less lethal weapons such as the TASER, baton, OC spray, and hands-on tactics may prove to be useful in satisfying both the public's and the law enforcement community's demand for a more peaceful way to resolve conflict.

Statement of Purpose

The purpose of this study is to determine which less lethal weapon used by officers is the most effective at stopping the escalation of force in police/citizen encounters. Additionally, by evaluating the variables police officers take into account regarding which less lethal weapon to deploy, this study assesses the effectiveness of the officers' initial decision making in choosing a weapon that stopped the escalation of force. Dror (2007) states, "Cognitive understanding of police decision making can lead to better procedures, training and use of technology, all of which can enhance decision quality" (p. 265). Therefore, this study is designed to assist agency leaders in implementing the most effective equipment and decision-making training for all officers. Policies that provide police officers with the tools and training necessary to stop the escalation of force will help officers, suspects, and law enforcement institutions.

Extant research examines less lethal weapons and injuries (Alpert and Dunham, 2000; Mesloh, Henych, and Wolf, 2008; Eith and Durose, 2011; Travis, Chaiken, and Kaminski, 1999). However, no scholarly research exists on the effect that less lethal weapons have on stopping the escalation of force. Although there are multiple studies regarding use of force, there is a gap in the literature pertaining to the most effective weapon that stops the escalation of force. As Mesloh, Henych, and Wolf (2008) noted, "an area [that] is almost completely unstudied is the area of Use of Force and Deterrence" (p. 91). Amendola (1996) indicates that there have been

several one-variable studies involving the characteristics related to use of force. However, Amendola (1996) pointed out, “There is a need for a comprehensive, descriptive model to help understand the larger factors (dimensions) and specific variables that affect the need or likelihood of an officer using force” (p. 2). Although this study does not create a descriptive model, it does add to the scholarly research by determining which factors officers use when making decisions about use of force incidents. This study intends to aid in filling the gap in criminal justice literature regarding officer decision making and the effect of less lethal weapons on stopping the escalation of force.

Research Questions

This study attempts to better understand the factors surrounding the escalation of force in police/citizen encounters. Specifically, this research attempts to determine:

1. What weapon, short of lethal force³, is most effective in stopping the escalation of force?
2. What factors do officers take into account in choosing a particular weapon and why?

Research Significance

This research is important in many ways. The research findings will be beneficial to law enforcement officers who can apply the findings in a practical, as well as a policymaking way. Additionally, the findings will add to existing scholarly research on the focal concerns perspective and also fill the gap that exists regarding which less lethal weapon is most effective at stopping the escalation of force. Each of these areas is discussed in the following sections.

³ Lethal force is force which may cause death or grave injury or that creates a degree of risk that a reasonable and prudent person would consider likely to cause death or grave injury (Alpha City Handbook, 2012).

Practical and Policy Significance

This research is significant in a practical way because it will determine the most effective less lethal weapon at stopping the escalation of force. These findings will be determined by analyzing documentation from law enforcement officers involved in use of force incidents. Identifying the most effective weapon enables officers to enter a situation knowing which less lethal weapon is most likely to be effective, allowing them possibly to forego the use of weapons that are non-effective. Additionally, variables that affect officer's decision making during use of force incidents will be identified in this research. Learning about the variables officers consider in their decision making and whether their initial decision making is effective can arm other officers with knowledge that allows them to make effective initial decisions. This knowledge can also reduce the time it takes to gain control of a situation and may possibly reduce injuries to officers and suspects. Finally, this research is significant in the policy arena because it is intended to assist federal, state, and local law enforcement officials and policymakers by suggesting possible policy revisions and by proposing new policies for implementing the most effective equipment for law enforcement officers.

Scholarly Significance

This study fills a gap in current criminal justice literature by examining which less lethal weapon is the most effective at stopping the escalation of force. Evidence of the gap in literature is provided by Mesloh, Henych, and Wolf (2008) who state, "This deterrent effect of less lethal options is of much interest, and is worthy of future study" (p. 92). Additionally, identifying the variables that officers take into account when making decisions regarding which less lethal weapon to use, will add to the literature regarding the focal concerns perspective. This perspective focuses on how officers use perceptual shorthand during decision making. Crow and

Adrion (2011) and Skolnick (2011), explain that perceptual shorthand is a means of quickly making decisions based on stereotypical assessments such as gestures used, language used, and attire worn. Finally, Crow and Adrion (2011) state that much of the existing criminal justice research lacks a theoretical basis. Because this research utilizes a theoretical basis it will add to the existing scholarly criminal justice research.

Theoretical Framework

This study employs the focal concerns perspective as a lens for shaping the research design and interpreting the data. The analysis is used to determine the factors that officers take into consideration when developing their own perceptual shorthand for use of force incidents (Hartley, Maddan, and Spohn, 2007; Crow and Adrion, 2011; Skolnick, 2011). This research explores several variables (i.e. method of force, stable traits such as age, race, and gender, and call type) that relate to the three main focal concerns, introduced in the 1980's by Steffensmier—(1) the blameworthiness/culpability of the offender; (2) the need to protect the community or the perceived dangerousness of the offender; and (3) consequences and practical constraints of sentencing decisions. The street-level bureaucrat construct is used as a lens for explaining how officers determine what actions they will take during a police/citizen encounter (Lovrich, Steel, and Majed, 1986; Maynard-Moody and Musheno, 2000). This construct is vital to explaining the high level of discretion that officers use in police/citizen encounters. The concept of officer discretion is the merging point between the focal concerns perspective and the street-level bureaucrat construct. The street-level bureaucrat construct explains officers' ability to exercise their discretionary power; while the focal concerns perspective accounts for the process that officers partake in when making use of force decisions.

Research Design

This research uses a mixed method approach. The participating law enforcement agency's "Use of Force Reports" from the 2011 calendar year are analyzed to determine if the reporting officer's initial decision regarding which less lethal weapon to use was effective at stopping the escalation of force. A "Use of Force Report" is a report that is completed and submitted by officer(s) who are involved in a use of force incident. For example, if the reporting officer initially chose to use soft empty hand control tactics and did not effect an arrest then that initial less lethal weapon decision is deemed ineffective. If the reporting officer then chose a different method of force and did effect an arrest without further escalation, the decision is deemed effective. Additionally, semistructured interviews with law enforcement officers are conducted for the sake of determining what factors the officers took into account when deciding which less lethal force option to use.

Summary of Dissertation Chapters

The contents of chapter two include a thorough examination of existing research on (1) each type of less lethal weapon, (2) less lethal weapons and injuries to both officers and suspects, (3) officer decision making during police/citizen encounters, and (4) the literature concerning the theoretical framework. This literature review is conducted to find similar research to inform this study as well as to document the need for more research in specific areas.

Chapter three discusses the research design used to answer the research questions. A summary of the data, samples, and information regarding the participating agency is provided to the readers. This chapter also discusses the dependent variable, 10 independent variables, hypotheses, measurement of each concept, and methods of data analysis.

Chapter four reports the research findings for each hypothesis and research question. A report of the bivariate statistics and the supporting qualitative findings are presented for research question one. Significant relationships between the independent variable and the dependent variables are also discussed. Additionally, a report of the qualitative findings for research question two is presented. Finally, findings that either support or do not support each hypothesis are explained.

Finally, chapter five includes an overall summary of the research and the findings for each research question. The implications this research has for the existing theoretical framework and scholarly literature are discussed. Suggestions for how the findings can be used to improve existing policies and practices are also included. Recommendations for areas of further research conclude the chapter.

CHAPTER II

LITERATURE REVIEW

This literature review documents research similar to the current study as well as the need for further research in specific areas. In this chapter, the key debate regarding which less lethal weapon most effectively stops the escalation of force is discussed through an overview of the pros and cons of the following weapons: (1) TASER, (2) OC spray, (3) expandable baton, and (4) hands-on control tactics. Research findings regarding the relationship between these less lethal weapons and resulting officer/suspect injuries are discussed, and the literature on officer decision making and the use of force literature is reviewed. Finally, the literature concerning the theoretical framework is reviewed. Addressing the gap in the current literature regarding less lethal weapons concludes the chapter.

Less Lethal Weaponry

Many studies define less lethal force as force that decreases the odds of deadly injury (e.g., Mesloh, Wolf, Henych, and Thompson, 2008; Mesloh, Henych, and Wolf, 2008). However, any weapon can cause death if not employed in its intended manner (Mesloh, Wolf, Henych, and Thompson, 2008). Therefore, research examining the variety, use, and impact of less lethal weaponry is critical. As noted earlier by Alpert and Dunham (2000) the idea of training officers to use hands-on tactics or less lethal weapons if they will be ineffective or cause unnecessary injuries makes little sense. The following section will discuss the strengths, weaknesses, and functionality of the TASER, OC spray, expandable baton, and hands-on tactics.

TASER

The TASER is a type of less lethal weapon that temporarily causes loss of muscle control as a result of an electric current passing through the body (e.g., Government Accountability Office, 2005; Mesloh, Wolf, Henych, and Thompson, 2008; Mesloh, Henych, and Wolf, 2008). According to Carr (2005), the TASER uses 50,000 volts to disable a suspect. By comparison, a static charge delivered by contact with another person after walking across a carpet is about 35,000 volts. Carr also noted that amperage, not voltage, is the element that causes serious physical harm. For example, Carr (2005) explained that the common household electrical outlet produces 15 to 30 amps while the TASER only produces 0.0021 of one amp.

Through numerous studies, the TASER has been determined to be effective at controlling suspects and reducing officer/suspect injuries. The Seattle, [Washington] Police Department reported an 87% success rate when TASER probe contact was verified and an overall success rate of 79% (Seattle Police Department, 2011). Another study involving a random selection of 400 deployments found the TASER to be successful in 68% of deployments (Mesloh, Henych, Hougland, and Thompson, 2005). Butler and Hall (2008) found that TASERs were an effective tool for reducing officer and suspect injuries. Additionally, other studies have found that the TASER has been used effectively on numerous occasions when either deadly force was justified or the suspect was armed with a deadly weapon (Hougland, Mesloh, and Henych, 2005; Carr, 2005). Additionally, Klint (2007) explains that the TASER offers control that does not rely on pain compliance to subdue a resisting suspect. Use of the TASER has resulted in a decrease in excessive use of force litigation against agencies as well as individual officers.

In a study that measured the strengths and weaknesses of less lethal weapons available to law enforcement, Mesloh, Wolf, Henych, and Thompson (2008) found that the maximum distance a TASER should be fired from to ensure optimal probe spread was 15 feet. They found that deployment at a distance of 15 feet produced a probe spread of 30 inches. This distance is nearly larger than the dimensions of a person's torso, thus making accurate placement difficult (Mesloh, Wolf, Henych, and Thompson, 2008). When the TASER was compared to applications of other less lethal weapons, Klint (2007) reported:

The TASER ECD has a distinct advantage since it is effective in causing incapacitation from a safe distance by overriding the central nervous system, and does not rely on pain compliance. The five-second TASER cycle affords officers a window of opportunity to capture, control, and handcuff the suspect, with decreased risks of injury to the suspect or officer, and without the need to resort to higher uses of force. (p. 3)

Likewise, Carr (2005) reported, "Using a TASER can eliminate the need for a police officer to close the distance between himself or herself and the suspect" (p. 2).

OC Spray

Chemical agents such as OC spray have been used by civilizations throughout the ages (Mesloh, Henych, and Wolf, 2008). OC spray, a popular less lethal option, is a suspect disabling irritant spray made from the oils of hot peppers; it attacks the eyes, nose, skin, and bronchial passages (Mesloh, Henych, and Wolf, 2008; Morabito and Doerner, 1997). Research from the early 1990s reported that OC spray had an overall effectiveness of nearly 90% (Nowicki, 1993). However, Mesloh, Wolf, Henych, and Thompson (2008) found cross-contamination of other officers to be an issue when using OC spray. Cross-contamination occurs when the OC spray that is administered to the suspect affects officers on the scene. The authors also advised that the

range of use for most sprays was less than eight feet, bringing officers and suspects very close in proximity. While OC spray has been proven effective, recent research has shown that its use is declining at the Orange County [Florida] Sheriff's Office, with many officers choosing to deploy their TASER instead (Mesloh, Wolf, Henych, and Thompson, 2008).

Expandable Baton

The expandable baton is classified as an impact weapon along with nightsticks, billy clubs, blackjacks, and saps (Mesloh, Henych, and Wolf, 2008). Law enforcement officers have been using impact weapons for hundreds of years (Mesloh, Henych, and Wolf, 2008). According to Johnston (1996), the expandable baton, a modified version of the straight police baton, was designed to collapse, making transportation and concealment easier. This development allowed officers to carry a full size baton on their duty belts in a discreet manner.

The expandable baton works through pain compliance; an officer strikes a resisting suspect in specific areas (e.g., large muscle masses), which causes the suspect pain and dysfunction, therefore allowing the officer to gain compliance (Borrello, 1999; Mesloh, Henych, Hougland, and Thompson, 2005; Gervais, Baudin, Cruikshank, and Dahlstedt, 1998). In order for an expandable baton to be effective, three key steps must occur: (1) the baton must be swung with a strong force, (2) there must be a fast delivery, and (3) the officer must be able to strike the target areas of the body (Gervais, Baudin, Cruikshank, and Dahlstedt, 1998). According to Johnston (1996), "a 1993 Vancouver Police Department survey revealed that 87% of the responding officers had been successful in de-escalating situations through the mere extension/presentation of the expandable baton (308 situations in a 6-month time frame)" (p. 15).

Hands-On Control Tactics

There are two types of hands-on control tactics: (1) soft empty hand and (2) hard empty hand. According to the Alpha City Handbook, (2011)⁴:

Soft empty hand techniques are designed to control passive or defensive resistance. They are used when verbal direction/commands are not effective and there is non-compliance with lawful orders. Pressure Point Control Tactics is the department approved defensive tactics system. Soft empty hand control techniques include strength techniques, joint locks, pressure points or distraction techniques, which are hand and leg strikes to specific motor nerve points. (pp. 1-2)

Hard empty hand control tactics are used to gain compliance of active resistant suspects or defensive resistant suspects when lower forms have failed (Alpha City Handbook, 2011). Hard empty hand control tactics commonly used include kicks and punches (National Institute of Justice, 2009).

Meyer (1992) found that many Los Angeles, California, police officers perceived upper body control holds as effective tools. However, Smith et al. (2010) found that officers who apply physical force and hands-on control increase the odds of injury to themselves and the suspect. In fact, when TASERS and OC spray are not used, the chances that an officer is injured increases by more than 300%, and suspect risk increases 50% (Smith et al., 2010).

Use of Force and Resulting Injuries

According to Eith and Durose (2011), in 2008, 776,000 or 1.9% of the 40 million people who had face-to-face contact with police experienced force or the threat of force at least once. Several studies have found that use of force incidents are a rare occurrence, with the majority

⁴ Alpha City Handbook is a fictitious name used to ensure the anonymity of the study sample.

falling below 2% of the total number of police/public interactions (e.g., Travis, Chaiken, and Kaminski, 1999; Alpert and Dunham, 2000; Mesloh, Henych, and Wolf, 2008; Butler and Hall, 2008; Seattle Police Department, 2010; Smith et al., 2010). While the number of use of force incidents is relatively low, the number of suspects and officers sustaining injuries is somewhat high. Estimates of injuries to suspects ranged from 18.9% to 40% (Alpert and Dunham, 2000; Mesloh, Henych, and Wolf, 2008; Eith and Durose, 2011), while injuries sustained by officers range from 1.8% to 38% (Travis, Chaiken, and Kaminski, 1999; Alpert and Dunham, 2000; Mesloh, Henych and Wolf, 2008). The literature provides a more in-depth analysis of injuries sustained by officers and suspects in comparison to the type of less lethal weapon used. Travis, Chaiken, and Kaminski (1999) found a 48% likelihood of officer injuries when officers used their fists as a type of force. The authors further concluded that when control of a suspect is gained through the use of arms and hands, officers have a 43% chance of sustaining injury.

According to Smith et al. (2010), the Richland County [South Carolina] Sheriff's Department issues TASERs to its officers. Of the 219 officers interviewed, 9% reported an injury with 12% of the related suspects reported as injured. It was also reported that the majority of both officer and suspect injuries were obtained while fighting on the ground or taking a suspect to the ground (Smith et al., 2010). On the other hand, the Columbia [South Carolina] Police Department does not issue TASERs to its officers. The injury rate sustained by officers as a result of ground fighting was 31% while the rate of injury to subjects was 40%. Carr (2005) compared injury rates from the Cincinnati [Ohio] Police Department for the last full year the department did not issue TASERs (February 2003 - January 2004) with the first full year the department issued TASERs (February 2004 - January 2005). Carr (2005) found that injuries to suspects and prisoners decreased by 35%, while injuries to officers decreased 56%.

Butler and Hall (2008) found that TASERs were the most widely used less lethal weapon throughout a two-year study, accounting for 271 applications out of 562 events. Furthermore, TASERs, when compared to the baton and physical control, resulted in fewer suspect and officer injuries. Of all TASER applications, 87% resulted in no or only minor injuries to suspects and as such, provides evidence that TASERs are an effective tool for reducing officer and suspect injuries (Butler and Hall, 2008).

Officer Decision Making

How an officer perceives, interprets, and evaluates a situation is pivotal in determining the action the officer will take (Dror, 2007). The quality of an officer's decision making is of utmost importance, especially regarding the use of force (Dror, 2007). According to Amendola (1996), "The actions taken by the officer can directly affect the immediate situation, the lives of individuals including himself or herself, the victims, perpetrators or suspects, innocent bystanders, and witnesses" (p. 6). In research conducted by Fridell and Binder (1992) involving the decision to shoot or not to shoot, the authors stated, "training aimed at reducing the number of inappropriate shootings by officers must emphasize the broad spectrum of information processing and decision making that begins during the initial response to a call" (p. 387). While Fridell and Binder's research focused on the officer's decision to shoot or not to shoot, the same school of thought can be applied to decision making regarding the use of less lethal force. The following sections discuss three decision making models.

Dror (2007) explained that the decision by officers to use force is based on three different types of factors: (1) decision factors (2) internal factors, and (3) external factors. Dror (2007) noted great variation regarding the decision factors involved in determining whether to use force. Decision factors consist of decision complexity and alternative choices, and relate to the

structure of the decision regardless of who makes the decision. For example, an important decision factor is the payoff matrix, which an officer uses to determine the consequences of a decision. The matrix outlines the consequences of making a wrong decision and includes both false positive and false negative decisions (i.e., using force when it is not needed and not using force when it is needed). With each alternative choice, there is a related payoff and, consequently, the decision complexity may increase.

Internal factors, according to Dror (2007), are critical to the decision-making process and relate to the decision maker rather than to just the decision. Internal factors can include level of experience, confidence level, personality, cognitive ability, and state of mind. Because of the different internal factors that define an individual's personality, Dror (2007) concluded that "different people faced with the same decision factors will arrive at different decisions because of the differences in their internal factors" (p. 268). Furthermore, Dror found that internal factors could vary within the same individual depending upon his or her state of mind, emotions and other internal factors. Dror (2007) also found that a person's internal state can have an effect on the way he or she estimates the consequences of alternative choices. Crow and Adrion (2011) seemed to support Dror's (2007) conclusions, stating, "Characteristics of officers and suspects and situational factors, including location and suspect resistance or demeanor, are the factors commonly found to influence the use of force" (p. 368).

In addition to decision factors and internal factors, Dror (2007) explained that external factors play a role in decision making. External factors can include time pressure and how information is presented to the officer. Dror et al. (1999) found that time pressure reduced decision thresholds and that, instead of modifying the decision-making strategy, the criteria for reaching a decision was modified, meaning that less evidence was needed when making

decisions. The way in which the circumstances of the event are presented to the officers (i.e., framing) can also affect their decision making (Dror, 2007). Dror (2007), explained, “Although the decision factors and internal factors are identical, the external framing of the decision can lead to totally opposite decisions” (p. 269). Dror’s (2007) conclusion would support the findings of Amendola (1996), which found that the information given to officers before they arrived on the scene affected their perception of the situation and their planning.

Amendola (1996) created a lengthy model representing the components that affect officer decision making and said, “An officer’s behavior is the culmination of a variety of influences and others’ action” (p. 2). The components in Amendola’s model are summarized in Table 2.1, and then, presented in detail in subsequent paragraphs.

Table 2.1: Amendola's Model of Officer Decision Making

Components	Description of Component
Antecedent Events	Actions that lead to the encounter.
Stable Traits of Parties	Social, emotional, and physical characteristics of the parties involved.
Situational Information	Information the officer has prior to arriving on scene.
Officer Characteristics	Individual characteristics, both personal and professional, of the officers involved.
Situational Characteristics	Characteristics that affect how an officer assesses the encounter.
Officer Assessment of Situation	How an officer assesses a situation, affected by different factors.
Options Available	Weapons, both less lethal and lethal, that are available for an officer to use.
Constraints and Facilitative Factors	Factors such as department policy and laws that affect officer decision making.
Behaviors of Parties	The actions of all other parties involved in an incident.
Situational Outcomes	The final outcome of an incident.

In Amendola’s (1996) model, antecedent events are considered to be any action that leads to the encounter between the police and suspect. The second component, stable traits of parties, consists of factors such as whether the parties are known to one another, the status of

relationships between the parties, the psychological states of the individuals, and the demographics of those involved. Knowledge of these factors helps define the situation faced by officers. The third component, situational information, is considered to be any information the officer has received prior to arriving on the scene. Officer characteristics, the fourth component, are defined as the individual characteristics of the officer and can include the amount of personal and professional experience, expectations, planning, assessment, and ability to perform appropriate action. When considering officer planning, Amendola (1996) states:

Although we often conceive of police response as a rather immediate action, the time between dispatch and arrival is critical for officer planning and decision making. Should any specific plans be made, they might interfere with an officer's ability to make an adequate situational assessment and select an appropriate response if they are based on either inadequate information or its misinterpretation. (p. 4)

Situational characteristics, the fifth component of Amendola's model, are visible and invisible characteristics that affect how an officer assesses the encounter. These characteristics can include the physical environment, the presence of weapons, the presence of vicious pets, the presence of other officers on scene, and the reasoning ability of the suspect (Amendola, 1996).

Amendola's (1996) sixth component encompasses the accurate officer assessment of the situation. This component plays a key role in choosing an appropriate response to an encounter. Factors that can affect an officer's assessment include the officer's emotions and the desired goal of the encounter. Furthermore, the seventh component, options available to the officer, includes options that may be standard issue equipment, or in some cases, specialized options are made available because of the nature of the situation, such as tear gas, pepperball guns or bean bag guns. Amendola, (1996) further recognized, "To handle a given situation, an officer may also

choose behavioral options (e.g., verbal commands, physical restraint) by themselves or in conjunction with technologies, tools, or tactics” (p. 4). Another component in Amendola’s model are constraints and facilitative factors. These are considered to include departmental policies as well as laws that affect an officer’s decision. Amendola (1996), explained, “Given the increasingly litigious nature of police-citizen encounters, officers must consider the legalities and political ramifications of any selected action and make decisions accordingly, often in a split second” (p. 5).

The ninth element of Amendola’s (1996) model, behaviors of parties, is a component that can be described as the actions of all of the other parties involved in the incident; this component can greatly affect the outcome of the encounter. According to Amendola (1996), “Obviously an officer does not act independently of other citizens in an encounter” (p. 6). The final component in Amendola’s model involves situational outcomes. These are the outcomes of the encounter. Amendola cautions that the outcome of an event can produce both long-term and immediate effects and that parties involved in situations such as hostage/barricaded person should receive debriefing.

Another attempt to shed light on the decision-making process of police officers was made in 1980 by Arnold Binder and Peter Scharf. They developed a four phase transactional model of violent police/citizen encounters. They suggested:

A police ‘decision’ to use, or not to use, deadly force in a given context might be better described as a contingent sequence of decisions and resulting behavior—each increasing or decreasing the probability of an eventual use of deadly force. (p. 116)

Binder and Scharf (1980) explained that the transaction phases consist of anticipation, entry, information exchange, and the final decision to act. The four phases may be condensed or there

may be an immediate transition from entry to final decision based upon the momentary visual and auditory cues the officer encounters.

During the first phase, the anticipation phase, the officer typically initiates the encounter as a result of being dispatched to a specific call, personal observation, or being given information by another person, either a citizen or a fellow officer. Binder and Scharf (1980) also explained that when an officer receives information, he or she reacts both emotionally and intellectually. In concurrence with Dror (2007) and Amendola (1996), Binder and Scharf (1980) concluded the manner in which the initial information was provided to the officer (i.e., the framing) can greatly affect the officer's reaction.

Next, according to Binder and Scharf's (1980) transactional model, the phase of entry entails when the officer enters the scene of the encounter. During this phase, several events take place: the officer must determine the existence of immediate danger, establish authority and expectations, and gather additional information about the situation at hand. Binder and Sharf (1980) caution, "The eventual probability of physical force may be escalated considerably by decisions early in the encounter" (p. 117).

The third phase of Binder and Scharf's (1980) transactional model, the phase of information exchange, involves the direct exchange of information between the officer and the suspect. This phase can vary in length from a few seconds to several hours or even days if there is a hostage/standoff situation. The fourth phase, the phase of final decision, occurs when the officer decides to use physical force, a decision that consists of a mixture of intellectual and emotional factors including, fear, rage, panic, extreme frustration, and humiliation. Binder and Scharf (1980) noted, "The presence of overpowering emotional elements is particularly likely to accompany a decision to use deadly force" (p. 118). Binder and Scharf (1980) explained, "the

final-frame situation confronted by the officer is in many ways determined by choices made at earlier decision points” (p. 118).

While none of Dror’s (2007), Amendola’s (1996), or Binder and Scharf’s (1980) factors/phases are consistent among models, there are similarities in the examples given by all of the researchers (e.g., available options/alternatives, the emotions of the officer, and the framing of the information provided to the officer). After reviewing each of the models, it is clear that there are multiple variables that affect how officers make use of force decisions. Also, the necessity to make these decisions quickly can further complicate an already complex situation.

Literature Concerning the Theoretical Framework

Focal Concerns Perspective

The focal concerns perspective is a theory originally introduced in the 1980s by Steffensmeier as a way to explain how judges, who are often operating under time constraints and with limited information, make sentencing decisions using three main focal concerns: (1) the blameworthiness/culpability of the offender; (2) the need to protect the community or the perceived dangerousness of the offender; and (3) consequences and practical constraints of sentencing decisions (Hartley, Maddan, and Spohn, 2007). In Crow and Adrion’s (2011) research on police use of force, each of the three main focal concerns was related to variables associated with use of force. The first focal concern, blameworthiness/culpability, was related to the call type to which an officer is responding. This relationship is due to the similarity of the call type variable to the offense seriousness variable that is used in the sentencing literature. The second focal concern, need to protect the community or dangerousness of the offender, was associated with the level of resistance of the suspect. According to Crow and Adrion (2011), “Suspects offering higher levels of resistance pose a greater threat of immediate danger to the officer and

potential danger to the community if they successfully evade an officer's control" (p. 372). The authors further state that the final focal concern, consequences and practical constraints of sentencing decisions, can be related to several variables such as: availability of back-up, time of day, location, and policy changes. Crow and Adrion (2011) state that incorporating the focal concerns theoretical perspective could advance use of force research because much of the existing research lacks a theoretical basis.

According to Crow and Adrion (2011), judges are able to gain some, but not all, information pertaining to the specific circumstances of a case through legal documents. In the interest of making sentencing decisions in a timely manner, they must develop a perceptual shorthand based on stereotypical assessments of the three main focal concerns (Crow and Adrion, 2011). Similarly for police, Skolnick (2011) maintains:

Police officers, because their work requires them to be occupied continually with potential violence, develop a perceptual shorthand to identify certain kinds of people as symbolic assailants, that is, as persons who use gesture, language, and attire that the police have come to recognize as a prelude to violence (p. 42).

Crow and Adrion (2011) and Skolnick (2011) reiterated Lipsky's (1971) work stating that a key behavior of individuals working in organizations is the development of a type of shorthand that enables them to make decisions quickly. Lipsky (1971) further states, "A policeman develops simplifications which suggest to him that crimes are in the process of being committed" (p. 395). Lipsky (2010) states that street-level bureaucrats, such as police officers, should ideally react to each individual case as it unfolds; however, the reality is that officers must learn to distinguish between a variety of encounters, especially ones that pose danger, and deal with them effectively.

Street-Level Bureaucrat

According to Lipsky (2010), street-level bureaucracies are “agencies whose workers interact with and have wide discretion over the dispensation of benefits or the allocation of public sanctions” (p. xi). These agencies include police departments, schools, welfare departments, social services, lower courts, and legal services offices (Lipsky, 2010). Lovrich, Steel, and Majed (1986) state the duties of street-level bureaucrats must include the following: (1) normal job duties involving continuous interactions with citizens; (2) a substantial amount of independence exercised while carrying out job duties and (3) decisions with a significant impact on the public. According to Lovrich, Steel, and Majed (1986), the amount of discretion that street-level bureaucrats possess can be linked to the complex and evolving situations that arise between the bureaucrat and the client. Furthermore, Lovrich, Steel, and Majed, (1986) advised, “Street-level bureaucrats perform must live with the need to make definitive decisions in ambiguous circumstances entailing imperfect (often inadequate) information” (p. 16). In essence, this need to make decisions is the overlapping point of street-level bureaucrats and the development of the perceptual shorthand.

According to Maynard-Moody and Musheno (2000), “Discretion is inevitable because of the nature of street-level work. Street-level workers make decisions case by case and client by client” (p. 338). Despite street-level bureaucrats being bound by rules and administration, their discretion is seen in every decision they make (Maynard-Moody and Musheno, 2000). Maynard-Moody and Musheno’s depiction of the prevalence of discretionary decision making is easily relatable to a police officer’s level of discretion during a use of force incident. Each use of force incident presents different circumstances, whether it is the number of suspects, the location of the event, or the age of the suspect. When choosing a weapon, the officer weighs the

circumstances, often by using perceptual shorthand, and determines which weapon would most effectively stop the event from escalating, and at the same time, remains appropriate for the circumstances of that case. For instance, if officers are responding to a call in a rural area where the availability of backup is questionable, their decision regarding which less lethal weapon to choose may differ from the weapon they would choose if they were responding to the same call in an urban area where backup is readily available. The same comparison can be made when considering a suspect's age; an officer's course of action would probably differ when dealing with a 75-year-old suspect versus a 25-year-old suspect. By recognizing that police officers exercise discretion when making use of force decisions, this study attempts to determine specifically which factors the officers take into account when making these types of decisions.

Weakness in Knowledge Base

The literature reviewed suggested that much of the current research surrounding the criminal justice arena is lacking a theoretical basis (Crow and Adrion, 2012). Additionally, the current literature includes a number of studies regarding the use of force and officer/suspect injuries (e.g. Alpert and Dunham, 2000; Mesloh, Henych, and Wolf, 2008; Butler and Hall, 2008; Smith et al., 2010). However, people who were advocates of a particular position wrote some of the studies. For example, Klint (2007) asserts that agencies that employ TASER technology have seen a reduction in the number of excessive force complaints and related civil litigation filed. This is an important assertion that adds to the knowledge base, but Klint was the vice-president and general counsel for TASER International and not a neutral researcher.

Furthermore, there is a gap in the literature pertaining to the most effective weapon that stops the escalation of the use of force (Mesloh, Henych, and Wolf, 2008). Despite a review of literature examining different less lethal tools for officers, none of the findings examine which

weapon is the most effective in preventing an escalation of force. Most of the studies here focus only on the single less lethal weapon and its singular effectiveness rather than comparing its effectiveness with other less lethal techniques.

Finally, a gap exists in the literature pertaining to officer decision making during less lethal use of force incidents. Amendola (1996) indicated that there have been several one-variable studies involving the characteristics related to the use of force. Amendola (1996) declared, “There is a need for a comprehensive, descriptive model to help understand the larger factors (dimensions) and specific variables that affect the need or likelihood of an officer using force” (p. 2). Furthermore, several studies regarding decision making during lethal force events have been conducted (e.g., Fridell and Binder, 1992; Milton et al., 1977; and Geller and Karales, 1981); however, there has been limited research pertaining to the factors the officers actually take into account when making decisions as to which less lethal weapon to use during a use of force incident.

Summary

The review of the literature regarding the use of force arena reveals that a large amount of research has been conducted regarding less lethal weapons. These studies have included research of the strengths, weaknesses, and functionality of different less lethal weapons. Additionally, a major portion of the use of force research focuses on less lethal weapons and their resulting injuries. The current body of literature suggests that TASER usage lowers the number of injuries for both officers and suspects (Seattle Police Department, 2011; Carr, 2005; Butler and Hall, 2008). This literature review also briefly examines the current literature pertaining to each less lethal weapon that is issued to members of the participating agency, as well as the current literature regarding less lethal weapons and their resulting injuries. However, through the course

of this literature review, I discovered that there is a weakness in the literature pertaining to which method of less lethal force is the most effective at stopping the escalation of force. Specifically, Mesloh, Henych, and Wolf (2008) state that the area of use of force and deterrence is almost completely unstudied.

Additionally, a review of the literature pertaining to officer decision making focused on the studies of Dror (2007), Amendola (1996), and Binder and Scharf (1980). Each of these studies made determinations about the decision-making process that officers exercise. While the three models did not use the same names for their factors/phases, the models did include similarities such as: available options, emotions of the officer, and the way an officer receives information. The examination of the literature also reveals a substantial amount of research has been conducted regarding the decision to use lethal force (e.g., Fridell and Binder, 1992; Milton et al., 1977; Gellar and Karales, 1981). However, a gap in the research exists in the area of non-lethal use of force incidents and officer decision making. Specifically, Amendola (1996) documents the need for more research to determine the specific variables that affect an officer's decision to use force.

CHAPTER III

RESEARCH DESIGN

The objective of this chapter is to familiarize the reader with the research questions and hypotheses as well as the data, measures, and methods employed to answer each research question. First, the research questions and hypotheses are stated to set the framework of the study. To aid in future replication of the study, the procedures used to gather the data and samples and the demographic information of the participating agency are provided. Next, an in-depth description of the variables and their measurements is provided to aid the reader in understanding the categorization of the independent variables.

This research employs a convergent mixed method research design to answer research question one. According to Creswell and Plano Clark (2011), “the convergent design occurs when the researcher collects and analyzes both quantitative and qualitative data during the same phase of the research process and then merges the two sets of results into an overall interpretation” (p. 77). The quantitative findings were used to determine the most effective less lethal weapon and the qualitative findings are used to corroborate the quantitative findings. This design employs a chi-square test, lambda measure of association, and a binary proportion test, as well as semistructured interviews to answer the first research question. Research question two is answered using strictly a qualitative research design. Semistructured interviews with officers were conducted, and then, the interview data are subjected to the open coding process using the constant comparative method. Finally, the quantitative and qualitative findings are merged to interpret the overall findings of the research study.

Research Questions and Hypotheses

This study addresses the following research questions: (1) what weapon, short of lethal force, is most effective in stopping the escalation of force? and (2) what factors do officers take into account before choosing a particular weapon and why? The hypotheses below were tested for each of the independent variables.

It should be noted that X_1 - X_5 are independent variables that relate to the concept, method of force. The “method of force” variables are derived from the less lethal weaponry literature discussed in chapter two. Also, these are the weapons issued to the officers from the participating law enforcement agency.

1. TASER (X_1) - The use of TASERs in officer/citizen encounters will stop the escalation of force.
2. OC Spray (X_2) - The use of OC Spray in officer/citizen encounters will stop the escalation of force.
3. Baton (X_3) - The use of a baton in officer/citizen encounters will stop the escalation of force.
4. Firearm (X_4) - The display of a firearm in officer/citizen encounters will stop the escalation of force.
5. Hands-on Tactics (X_5) - The use of hands-on tactics in officer/citizen encounters will stop the escalation of force.

The independent variables, race, age, and gender (X_6 - X_8) relate to the stable traits component of Amendola’s (1996) decision-making research. The variables, call type and number of suspects (X_9 - X_{10}) are derived from the participating agency’s “Use of Force Reports.” These variables are

analyzed using qualitative methods, specifically the constant comparative method, in order to answer research question two.

Data and Samples

The participating agency was selected for numerous reasons, the first and foremost reason being the agency's openness and willingness to participate in this study. The size of the agency and size of the community it serves are also of vital importance to the replication of the study. The agency is comprised of 120 commissioned law enforcement officers, with 80 serving in a patrol capacity and 35 in the Criminal Investigation, Warrants, Training, and Administration Divisions. It should be noted that any commissioned law enforcement officer may legally use force when it is deemed necessary, and the officer is required to complete the "Use of Force Report" regardless of his or her duty assignment. The population of the community served by the participating agency is approximately 75,000 (Alpha City Handbook, 2014). This size of agency and city were chosen to aide in the future replication of the study because there are numerous other agencies and cities nationwide that are similar in size. Finally, this agency was selected due to the number of use of force incidents it had during a calendar year. The sample size of incidents was large enough to produce quantitative results that have less variability.

"Use of Force Reports" from the 2011 calendar year were gathered from the participating law enforcement agency. The reports were obtained from a superior officer within the agency. In total, there were 113 use of force incidents during that year. To ensure the anonymity of the agency and officers, each report is assigned a numeric value that is not associated with the report number assigned by the participating agency. Furthermore, officers that participated in the interviews are assigned a number that corresponds with the numeric value that is given to the specific use of force incident that they are involved in handling.

Limitations

1. Although there were in excess of 100 use of force incidents during the 2011 calendar year, the study is conducted by one individual; therefore, only five officers are interviewed. While more interviews may contribute more information, the knowledge gained from the interviews still provides a detailed description of the officer's decision-making process.
2. Each officer involved in a use of force incident is required to complete a written narrative explaining the sequence of events as part of the required "Use of Force Report." Some officers provided very detailed, descriptive narratives that explain the factors that led to their decision making (e.g., the suspect clenched his fists and took a fighting stance, incident occurred in a second floor room that contained a large window). However other officers may provide a narrative that contains only the basic details of the incident. While both types of narratives provided a wealth of knowledge regarding the incidents, some of the narratives provided more detailed information about the decision factors than others.
3. During the year of the study, there are only a few female officers involved in use of force incidents. Because of the small sample size of female officers, the gender of the officer is not an independent variable. Therefore, comparisons regarding which weapon is most effective for male officers versus female officers are not made. Likewise, there is not a comparison of the effectiveness of male officers' versus female officers' initial decision making.
4. During the year of the study, there are only a few female suspects involved in use of force incidents. The small sample size results in no data to determine the most effective less lethal weapon to stop the escalation of force during encounters with only female suspects. However, reports with female suspects are included in this study in effort to determine

the most effective less lethal weapon to stop the escalation of force involving both male and female suspects.

Variables

After a use of force incident, each officer is required to complete a “Use of Force Report.” These reports contain stable traits (demographic information) about the suspect, the type of less lethal force that was used, the number of suspects involved, and a written narrative recounting how the use of force incident unfolded. The narrative section details the initial call type and whether the method of force was effective. The “Use of Force Reports” are examined and coded to ascertain information regarding the dependent variable and the independent variable, method of force, for this study.

Dependent Variable and Measurement

The first research question is, when a police officer chooses a less lethal weapon, did the weapon stop the escalation of force? To test for results, the study uses the dichotomous dependent variable, escalation of force. Using the “Use of Force Reports,” the dichotomous dependent variable is coded as 0 or 1, with 0 being stopped the escalation of force, and 1 being escalation of force. The value of the dependent variable is determined from the narrative section of the “Use of Force Report.” If the report shows that an arrest was made as a result of the initial less lethal weapon usage, then the weapon used in that specific incident is coded as successfully stopping the escalation of force. On the other hand, if the narrative indicated that one weapon is used and the officer had to resort to another type of force to arrest the suspect, then the initial weapon that was used is coded as escalation of force. The agency’s “Use of Force Reports” are analyzed, and the frequency of use, both effective and ineffective at stopping the escalation of

force for each less lethal weapon, is reported in Table 3.1. These data are used to answer the first research question.

Table 3.1: Frequency of use for each less lethal weapon

	Taser	OC Spray	Baton	Firearm	Hands-On	Total
Effective	22	3	0	5	71	101
Ineffective	3	0	0	6	14	23
Total	25	3	0	11	85	124

Independent Variables and Measurement

This study relied upon 10 independent variables to help answer the research questions. The variables for the concept “method of force” are gathered from “Use of Force Reports” and specifically used to answer the first research question. The independent variables for the concept “stable traits of suspects” and the variables initial call type, and number of suspects are drawn from the officer decision making literature in chapter two. These variables are used to answer the second research question. In order to answer the second research question, each officer interviewed is asked specific questions pertaining to the use of force incident in which he/she was involved. Their interviews are transcribed and then analyzed qualitatively using the constant comparative method.

For the purpose of this study, the variables that are used in the concept “stable traits of suspects” consist of race, age, and gender. The concept stable traits of suspects draws from the officer decision-making work of Amendola (1996). As discussed in chapter two, the stable traits of parties component of Amendola’s decision making model can consist of various factors such as demographics, relationships between the parties, psychological state, and whether the parties are known to one another.

The independent variable initial call type, which is measured qualitatively from information gathered from officer interviews, refers to the type of call to which an officer

responds. The types of calls include, but are not limited to, domestic violence, burglary/robbery, assault, disturbance, traffic offences, and citizen encounters. It is also important to note that an officer is not always dispatched to calls; there may be instances where an officer witnesses an incident or when they are directed by a citizen to an incident. When an officer is dispatched to a call, the dispatcher indicates to the officer the type of call to which he or she is responding. After the officer responds to the call, the officer documents, in the narrative section of the “Use of Force Report” the type of call to which he/she was dispatched. It should be noted that an officer only completes a “Use of Force Report” if the officer had to employ some sort of force to resolve the incident. Due to the highly fluid nature of a police/citizen encounter, once an officer arrives on scene, the circumstances and call type can change. For example, officers may be dispatched to a shoplifting call, and when they arrive on scene, they find a stabbing victim. In this instance, the officer’s initial decision making regarding which less lethal weapon to employ would change. Although changes in call types take place, such progression is rarely documented in the “Use of Force Report.”

The final independent variable is number of suspects. This variable is explained through the situational characteristics component from Amendola’s (1996) work relating to officer decision making. This component encompasses any information the officer has prior to arriving on the scene. The dispatcher often provides information regarding the number of suspects while he or she is informing officers of the call. The independent variables discussed in the previous sections and that are used to answer the research questions are listed in Table 3.2.

Table 3.2: Independent Variables

Variable Name	Measurement of Variable
<i>Method of Force Variables (X₁-X₅)</i>	
TASER (X ₁)	0= Taser not used, 1= Taser used
Oleoresin Capsicum (OC) Spray (X ₂)	0= OC Spray not used, 1= OC Spray used

Table 3.2: Independent Variables (Cont.)

Variable Name	Measurement of Variable
Expandable Baton (X ₃)	0= Expandable Baton not used 1= Expandable Baton used
Hands-on Tactics (X ₄)	0= Hands-on Tactics not used 1= Hands-on Tactics used
Display of Firearm (X ₅)	0= Firearm not displayed, 1= Firearm displayed
<i>Stable Traits of Suspects (X₆-X₈)</i>	
Race (X ₆)	Officer responses during semistructured interviews
Age (X ₇)	Officer responses during semistructured interviews
Gender (X ₈)	Officer responses during semistructured interviews
Call Type (X ₉)	Officer responses during semistructured interviews
Number of Suspects (X ₁₀)	Officer responses during semistructured interviews

During the process of coding the independent variables, it was discovered that 10 of the 113 incidents involved officers being dispatched to dispose of injured animals. The participating agency's use of force policy says, "A use of force form and memorandum to the officer's direct supervisor shall be completed when an animal is killed" (Alpha City Handbook, 2012, p. 2). These 10 incidents were discarded from the study. Additionally, five incidents involved force being used against a juvenile suspect. Due to confidentiality laws, these incidents were also discarded from the study. After discarding the incidents involving the disposal of injured animals and those involving juvenile suspects, the remaining 98 incidents are included in the study.

Methodology

This research project uses a convergent mixed method design in order to answer the first research question. The quantitative data are arrayed in crosstabs in the following manner: the frequency of use and percentages of effectiveness and ineffectiveness are listed in each column, and a type of weapon is listed in each row for the purpose of expressing the relationship between each variable. Tests of statistical significance (i.e., chi-square) and measures of association (i.e., lambda) are conducted for each independent variable gathered from the "Use of Force Reports"

that related to method of force. In addition, binomial proportion tests are conducted on the data to determine which less lethal weapon is the most effective at stopping the escalation of force as well as to determine if a method is more or less effective than another method. The data from semistructured interviews with officers are qualitatively analyzed through content analysis using the constant comparative method. These findings are used to corroborate the quantitative findings.

The second research question is answered by using qualitative methods. Specifically, semistructured interviews are conducted with officers that were involved in the 2011 use of force incidents within the sampled police department. The constant comparative method is used to analyze the interviews to determine what factors the officers took into account when deciding which less lethal force option to use. Finally, the quantitative and qualitative portions of the analysis are combined using the convergent mixed method design. According to Creswell and Plano Clark, (2011) “The convergent design occurs when the researcher collects and analyzes both quantitative and qualitative data during the same phase of the research process and then merges the two sets of results into an overall interpretation” (p.77). The merging of the two sets of data may include comparing, contrasting, and/or synthesizing the results of each set, transforming the results to more easily relate the two types of data, and conduct more analysis based on the transformed data (Creswell and Plano Clark, 2011).

Quantitative Research Methods

After coding both the dependent and the independent variables, the data are displayed in crosstabs using the following strategy: the frequency of use and percentages of effectiveness and ineffectiveness are listed in each column, and a type of weapon is listed in each row. Chi-square tests determine if there is a statistically significant relationship between an independent variable,

specifically the method of force used, and the dependent variable, effectiveness or ineffectiveness (Berman, 2007). Once the existence of a statistically significant relationship is verified, the lambda value is calculated to measure the strength of the relationship between the dependent and independent variables (Johnson and Reynolds, 2011). The binomial proportion test is then used to determine if there is a statistically significant difference in the effectiveness of each method (Ott, 1988).

Qualitative Research Methods

According to Hatch (2002), “Qualitative research seeks to understand the world from the perspectives of those living in it.” (p. 7). The qualitative component of this research consists of a grounded theory case study methodology involving multiple cases and semistructured interviews with officers from the participating agency. The analysis of the information garnered from the officer interviews is examined to answer the second research question, which seeks to determine what factors officers take into account when making use of force decisions.

Grounded Theory, Postpositivism, and Case Study

Hatch (2002) indicated, “Grounded theory is clearly a postpositivist method” (p. 26). Hatch (2002) further noted that postpositivist researchers strive to maintain objectivity and to ensure that empirical data drives findings. Jones, Torres, and Arminio (2006) stated, “The purpose of grounded theory research is to develop theory that remains true to and illuminates the phenomenon under investigation by studying the experience from the standpoint of those who live it” (p. 42). They assert that case studies prove to be helpful when a researcher is asking questions that attempt to determine “how” or “why” and when the researcher has little control over the surrounding events (Jones, Torres, and Arminio, 2006). Conducting case studies that include examining use of force incidents and officer interviews is very helpful in answering the

second research question regarding the factors officers take into account when choosing a particular weapon. When an officer writes the narrative portion of the “Use of Force Report,” the purpose is to record how the events unfolded and to present the facts. It is unlikely that all officers would include in the report why they made certain decisions or what factors played a part in their decision making. These areas can be better addressed during a face-to-face interview with the officer.

Semistructured Interviews

Semistructured interviews, conducted during the case studies, begin with specific questions and then probing questions depending on the officers’ responses (Hatch, 2002). Officers that are interviewed are chosen from a field of officers involved in use of force incidents. This is accomplished by randomly selecting two “Use of Force Reports” from each of the following categories: hands-on, TASER, and firearm. According to Hatch (2002), “Qualitative studies try to capture the perspectives that actors use as a basis for their actions in specific social settings” (p. 7). The second research question is designed to determine what factors the officer takes into account when deciding which less lethal weapon to use during a use of force incident. The officer interviews provide insight into the way the use of force incidents unfolded and why the officers chose that specific course of action. The qualitative findings also assist in identifying problems with existing policy.

According to Hatch (2002), “The strength of interviews is that they allow insight into participant perspectives” (p. 97). Prior to conducting the interviews, a list of questions for the interview participants is compiled. Berg (2009) suggests that the list contain four types of questions to gain the maximum amount of knowledge during the interview: (1) essential, (2)

extra, (3) throw away, and (4) probing. The following list provides a summary and example of each type of question that is used.

- *Essential*. These questions address the main focus of the research and are scattered throughout the interview. Each seeks specific information (e.g., Which less lethal weapon do you believe is the most effective?).
- *Extra*. These questions are nearly the same as essential questions; however, these are worded differently to check the consistency of answers (e.g., During the course of your work shift, which less lethal weapon do you prefer to carry?).
- *Throw Away*. These questions do not prove to be important for gaining information regarding the specific topic. They are typically used during the beginning of the interview to establish a level of comfort for the interviewee and develop rapport between the interviewee and the researcher (e.g., How long have you been employed by the department?).
- *Probing*. These questions are asked in response to an answer given by the interviewee in hopes of eliciting more information (e.g., Can you tell more about the behavior of the suspect?). By asking the officers specific and then probing questions, the interviewer is able to clarify answers or question further.

The survey instrument is composed prior to the interviews and contains all types of questions, including probing questions. The survey instrument is included in Appendix B.

Personal Documents

When officers are involved in use of force incidents, they must provide a written narrative of the sequence of events as a part of the required “Use of Force Report.” For this study, these narrative reports serve as a type of personal document. According to Berg (2009),

“Personal documents involve any written record created by the subject that concerned his or her experiences” (p. 324). Berg (2009) went on by saying that although personal documents are subjective in nature, they provide insight to the perceptions of the authors, making them useful data to be included in a case study.

Content Analysis

The officer interviews are evaluated through content analysis using the constant comparative method. According to Berg, (2009) “Content analysis is a careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases, and meaning” (p. 338). Berg (2009) holds that content analysis is mainly a process of coding and data interpretation.

Constant Comparative Method and Coding

Jones, Torres, and Arminio, (2006) find that “The constant comparative method engages the researcher in a process of constantly analyzing data at every and all stages of the data collection and interpretation process, and results in the identification of codes” (pp. 43-44). Constant comparison deals with comparing different things including comparing the beliefs and actions of individuals, which was a focus of this research. Jones, Torres, and Arminio (2006) identified three levels of coding as open, axial, and selective. The following sections describe each level of coding used in the study.

Open coding, according to Jones, Torres, and Arminio (2006), “describes the initial stages of data analysis and begins with the ‘fracturing of data’ and careful examination of the words used by participants to describe or convey experiences, understandings, or meaning” (p. 44). This process involves the line-by-line analysis of the data. Strauss (as cited in Berg, 2009) offers four guidelines when conducting open coding: (1) ask the data a specific and consistent set

of questions, (2) analyze the data minutely, (3) frequently interrupt the coding to write a theoretical note, and (4) never assume the analytic relevance of a traditional variable such as age, sex, social class, and so on until the data show that variable to be relevant. Based upon these guidelines, the officer interviews and written narratives are subjected to the open coding process.

After the initial coding process takes place, the next step is to develop categories of similar concepts. After the categories are developed and documented, all of the supporting concepts are listed under each category. This phase of coding is particularly helpful when determining why the officers chose a specific method of force the most frequently. For example, the officers claimed that they used hands-on tactics the most. While coding the data, the category of proximity between officer and suspect emerged. The category proximity contains the concepts of *used to gain distance*, *close proximity*, and *no time to do anything else but grab*. Furthermore, the category of factors the officer took into account also emerged. This category contains the concepts of *call type*, *prior knowledge of suspect*, *age*, *gender*, *condition of suspect*, and *physical stature*.

After the open coding process is complete, the next stage, axial coding, takes place. Jones, Torres, and Arminio (2006) state that this type of coding involves putting back together the fractured data and results in the creation of higher order categories. Strauss and Corbin (as cited in Jones, Torres, and Arminio, 2006) hold that “These higher order categories begin to represent theoretical constructs in order to make explicit the relationship among categories” (p. 45).

The final level of coding is selective coding. This type of coding involves selecting the core category and relating it to other categories and validating those relationships, and filling in other categories that need further work (Jones, Torres, and Arminio, 2006). During this stage of coding, a story line, which is the core category and integrates all other categories, is developed

that explains what is happening in the study. Jones, Torres, and Arminio (2006) reveal, “Emerging theory, then, grounded in the data, is written from an analysis of the core category” (p. 45).

Development of Grounded Theory

After the completion of the data analysis, Berg (2009) recommends that the researchers reflect upon their research, consider the findings, look for alternative explanations, and compare the findings to the extant literature. In regards to the effectiveness of less lethal weapons at stopping the escalation of force, there has been little research conducted. The findings can, however, be compared with the injuries associated with less lethal weapons. The final step, the development of grounded theory, offers explanations of the problem and comparing them with the current literature (Berg, 2009).

Mixed Method Study

According to Berg (2009) a mixed method study utilizes both quantitative and qualitative research methods. Further Berman (2007) explains, “Research in public management and analysis typically uses both quantitative and qualitative research methods” (p. 18). In this study, a convergent design is used to answer research question one in that both the quantitative and qualitative data are separately collected and analyzed and then merged during the interpretation phase. The purpose of the convergent design, according to Morse (1991), is “to obtain different but complementary data on the same topic” (p.122). Creswell and Plano Clark (2011) also report that another purpose of this design type is “synthesizing complementary quantitative and qualitative results to develop a more complete understanding of a phenomenon” (p. 77). This type of design consists of four major steps: (1) the researcher collects both the quantitative and qualitative data, (2) the two data sets are analyzed separately and independently, (3) the

researcher works to merge the two data sets. This can include direct comparison as well as relating the two sets of data for further analysis, and (4) the findings are interpreted to determine ways that they converge, diverge, relate, and combine in order to produce a better understanding of the topic of study (Creswell and Plano Clark, 2011).

Summary

This research utilizes both quantitative and qualitative methods (i.e., chi-square test, lambda measure of association, binomial proportion tests, and semistructured interviews) to answer research question one, which states: what weapon, short of lethal force, is most effective in stopping the escalation of force? Additionally, research question two states: what factors do officers take into account before choosing a particular weapon and why? Qualitative methods, specifically semistructured interviews, are designed and employed to determine this answer. The research findings will then be merged using the convergent design in effort to understand the convergence and divergence of both the qualitative and quantitative results.

CHAPTER IV

EMPIRICAL FINDINGS

This chapter presents and discusses the research findings for each research question. The general field of the research pertains to why force escalates in police/citizen encounters.

Specifically, this research attempts to determine: (1) what weapon, short of lethal force, is most effective in stopping the escalation of force and (2) what factors do officers take into account in choosing a particular weapon and why?

The first research question is evaluated using quantitative and qualitative methods. “Use of Force Reports” from the participating law enforcement agency are collected and examined. Then, chi-square tests and lambda measures of association are conducted on data obtained from the “Use of Force Reports.” A final quantitative test, the binomial proportion test, is performed to determine if pairs of percentages are statistically different. Qualitative research findings gathered from semistructured officer interviews are used to support the quantitative findings. The second research question is evaluated through the use of qualitative methods. Officers that were involved in a use of force incident during the target year are randomly selected for interview. The interviews are conducted to gain insight as to why each officer chose a particular less lethal weapon over the others that were available at the time of the incident.

Quantitative Research Findings

Effectiveness in Stopping the Escalation of Force

To generate observations based on data, each “Use of Force Report” from the participating law enforcement agency is examined to determine if the weapon(s) the officer(s) used is effective or ineffective at stopping the escalation of force, which is the focus of research

question one. Table 4.1 reports the effectiveness of each method of less lethal force used during each use of force incident.⁵

Table 4.1
Method and Effectiveness Crosstabs on All Categories of Less Lethal Weapons

Type of Less Lethal Weapon	Number of Times Effective	Frequency of Use	% Effective	Number of Times Ineffective	% Ineffective
TASER	22	25	88%	3	12%
OC Spray	3	3	100%	0	0%
Baton	0	0	0%	0	0%
Hands-On	71	85	84%	14	16%
Firearm	5	11	45%	6	54%

The TASER is used in a total of 25 different use of force incidents.⁶ The TASER is effective at stopping the escalation of force in 22 of 25 occurrences (88%) and is found to be ineffective at stopping the escalation of force only three times (12%). Officers used OC Spray on three different occasions. It is effective at stopping the escalation of force three times (100%). When reviewing the “Use of Force Reports,” it is found that the baton is only used during one incident. This incident is discarded from the sample due to the number of officers, suspects, and the inability to determine the order of events. Different varieties of hands-on tactics (e.g., soft empty hand and hard empty hand) are used in a total of 85 different use of force incidents.⁷ Hands-on tactics are successful at stopping the escalation of force 71 times (84%) and are

⁵ This research study utilized data from 98 different use of force incidents. However, in table 4.1 the total frequency of use (N) of each type of less lethal weapon is 124. This variation is due to the number of methods of force used in a single use of force incident. For example, if an officer is involved in a use of force incident and is required to utilize multiple methods of force, then each method of force the officer used is recorded for that single incident.

⁶ TASER use is recorded only one time during a use of force incident. If there is an incident where multiple officers used the TASER on the same suspect then the use of the TASER is only recorded one time.

⁷ Hands-on tactics are recorded only one time during a use of force incident. If there is an incident in which multiple officers or the same officer used hands-on tactics on the same suspect multiple times, then the use of hands-on tactics is only recorded one time.

unsuccessful 14 times (16%). The method called firearm consists of incidents in which officers only displayed their firearm.⁸ During the time period of the study, officers displayed firearms during a total of 11 different incidents.⁹ The display of the firearm is effective on five occasions (45%) and is found to be ineffective on six occasions (55%).

After examining the cross tabulation for effectiveness and ineffectiveness, the category OC spray is removed because of the small sample size. OC spray is only used in three use of force incidents. The incident involving the baton is also discarded from the sample. Table 4.2 is prepared after removing the methods OC spray and baton. The table is made for the sake of simplifying the presentation of the data for the chi-square test and lambda measure of association.

Table 4.2
Method and Effectiveness Crosstab with OC Spray
and Baton Removed

	TASER	Hands-On	Firearm
Number of Times Ineffective	3 (12%)	14 (16%)	6 (54%)
Number of Times Effective	22 (88%)	71 (84%)	5 (45%)

$$X^2=11.09(\alpha<.01,df=2) \lambda=0.04$$

Chi-Square and Lambda Values

The methods of force presented in table 4.2 are used to conduct a chi-square test to determine whether the relationship between the independent variable (i.e., method of force used on the suspect such as TASER, hands-on, and firearm) and the dependent variable (i.e., the ineffectiveness or effectiveness in stopping the escalation of force) is statistically significant.

⁸ The firearm was classified as a less lethal weapon because the mere display of the firearm constitutes a use of force. Also, the participating law enforcement agency requires its officers to fill out a "Use of Force Report" when they display their firearm.

⁹ During the time period of the research, there is one more incident in which an officer displayed a firearm. This entire incident is discarded due to the number of officers, suspects, and the inability to determine the order of events.

Lambda is calculated to measure the strength of the relationship. The chi-square for the crosstab in Table 4.2 is 11.09, which is significant at $\alpha < .01$, d.f. = 2. Thus, the relationship between method of force and the dependent variable, effectiveness, is statistically significant.

Because the independent variable and the dependent variable are measured at the nominal level, the appropriate measure of association is lambda (λ). Lambda is a measure of the strength of the relationship between the independent variable and the dependent variable. Lambda is 0.04 for the observations displayed in Table 4.2, meaning the relationship between the dependent variable and independent variable was weak. In summary, a weak but statistically significant relationship exists between the method of force and the effectiveness in stopping the escalation of force.

The most effective method for stopping the escalation of force is the TASER with an 88% effectiveness rate. Even though the TASER is the most successful method, it was not the most popular method of force chosen by officers. The most popular method of force is hands-on tactics, which were used in 85 out of 121 incidents (70%). Hands-on tactics were successful 84% of the time, making this method of force the second most effective. While TASER (88%) and hands-on tactics (84%) were relatively close in terms of effectiveness, it is interesting to look at the actual number of times each method was ineffective in its use. The TASER is only ineffective in three (12%) incidents, while hands-on tactics are ineffective in 14 incidents (16%). These quantitative findings support the need for further research using qualitative methods to ascertain why officers overwhelmingly chose hands-on tactics over all other force methods available to them.

Binomial Proportion Test

After determining a significant relationship exists between method of force and effectiveness, a binomial proportion test is conducted to provide further information regarding the relationship between the methods of force. Specifically, the z-scores are calculated and used to determine if the differences between the effectiveness of each method of force are statistically significant.¹⁰ The binomial proportion test is conducted using the following formulas:

$$\mu_{\hat{\pi}_1 - \hat{\pi}_2} = \pi_1 - \pi_2 \text{ and } \sigma_{\hat{\pi}_1 - \hat{\pi}_2} = \sqrt{\frac{\pi_1(1 - \pi_1)}{n_1} + \frac{\pi_2(1 - \pi_2)}{n_2}}$$

where π_1 = *sample proportion*, π_2 = *sample proportion*, n_1 = *sample size*, and n_2 = *sample size* (Ott, 1988, p. 240).

The first test compares the TASER to hands-on tactics. The test produces a z-score of 0.4, indicating that the difference between the effectiveness of the TASER (88%) and hands-on tactics (84%) is not statistically significant. The second comparison is between the TASER and firearm and produces a z-score of 1.95. This score indicated that there is a statistically significant difference between the effectiveness of the TASER (88%) and the effectiveness of the firearm (45%) at $p \leq .05$. The final comparison was between hands-on tactics and firearm. Again, a z-score of 1.95 is calculated, indicating that there is a statistically significant difference between the effectiveness of hands-on tactics (84%) and the display of a firearm (45%) at $p \leq .05$.

¹⁰ The assumption of independence was violated. This violation occurred because information regarding the method of force that was used by multiple officers during a single use of force incident was recorded and analyzed.

Qualitative Research Findings

Sample Selection Procedure

The data used for the qualitative portion of this research are gathered by conducting semistructured interviews with officers who were involved in use of force incidents. The information gained from the interviews is used to answer research question two. The “Use of Force Reports” are categorized by type of initial less lethal force used (i.e., TASER, hands-on, and firearm). Next, two use of force incidents are randomly chosen from each category. The officer who is involved in the incident and completed the “Use of Force Report” is then interviewed to gain insight into his or her decision-making process regarding less lethal weapons.

Six reports are selected; however, one officer elected to withdraw from the interview. The following findings are based on the information provided by five officers. To ensure officer anonymity, each “Use of Force Report” and each officer are assigned a numerical value. This value is referenced in this study each time an officer or incident is mentioned. Table 4.3 provides the relationship between the weapon category, the “Use of Force Report,” and the officer.

Table 4.3
Reference Sheet for Weapon Category, Use of Force Report, and Officer

Weapon Category	Use of Force Report	Officer
Firearm	Report 101	1
Hands-on	Report 102	2
Hands-on	Report 103	3
TASER	Report 104	4
TASER	Report 105	5
Firearm	Report 106	Withdrew

Officer Interview Responses

Officer Stable Traits

To gain knowledge about each of the interviewed officers, questions aimed at collecting background information of the officers are asked. All of the officers interviewed are males. Officers are also asked to provide the number of years of law enforcement experience they have as well as what their current rank is. To promote understanding of the officer ranking structure of the participating agency, the following list provides the name of each rank in order from lowest ranking to highest ranking: Patrol Officer, Patrol Officer First Class, Corporal, Sergeant, Lieutenant, Captain, Deputy Chief of Police, and Chief of Police. Officer 1 has 12 years of law enforcement experience and has achieved the rank of Sergeant. Officer 2 has been employed in the law enforcement field for five years and is ranked as Patrolman First Class. Officer 3 is a Corporal and has six years of law enforcement experience. Officer 4 has achieved the rank of Sergeant and has 16 years of law enforcement experience. Officer 5 has been in the law enforcement field for nine years and is a Corporal.

Less Lethal Weapons

All of the officers interviewed are employed by the same law enforcement agency, and each patrol officer is issued the following less lethal weapons: (1) baton, (2) OC spray, (3) TASER, and (4) firearm. Also, each officer is trained in hands-on control tactics, which is considered a form of less lethal force. While all officers are issued these weapons, by department policy, they are not required to carry the baton on their duty belt. The interviews reveal that two out of five officers elect not to carry the baton. Officer 1 responds that he keeps his baton in his duty bag in his patrol car, while Officer 4 said that he does not carry the baton because he has never used it except to break a window.

After determining which less lethal weapons each officer carried, each officer is asked which less lethal weapon that they use the most and why. All of the officers reveal that the less lethal weapon they use the most is hands-on control tactics. Four out of five officers thought that their proximity to the suspect plays an integral role in their decision to “go hands-on.” Three out of five officers cite time as being a factor in their decision making. Officer 2 (2014) indicates, “The use of force is usually very unexpected and very sudden.” The other officers reveal that there is rarely time to do anything but grab the suspect and, thus, not always time to deploy a secondary weapon. Furthermore, three out of five officers report that they choose to use hands-on tactics because they have been effective in the past and they feel comfortable using them. Additional reasons that are supplied by the officers for choosing hands-on tactics are that (1) the suspects are generally unarmed; (2) control can be gained a lot faster by just grabbing someone; (3) most incidents do not meet the criteria for use of the baton, OC spray, or TASER; and (4) they have been able to verbally deescalate situations without using force in the past.

The next question asks which weapon the officers believe is the most effective at stopping the escalation of force and why. All five of the officers interviewed responded that they believe the TASER is the most effective. Three of the five officers contribute the successfulness of the TASER to the visual deterrent effect of that weapon. The officers indicate that the threat of use or the display of the TASER is often enough to gain suspect compliance. One officer said that the TASERs they carry are equipped with the laser dot, and the dot works as an effective deterrent. Another officer claims that the psychological effect of the TASER is why he thinks it is effective. He thinks that it is fear, if a person has been tased, they do not like it.

Training: Weapons and Decision Making

The officers are asked questions regarding weapons training, both initial training and yearly training. All of the officers reply that they are provided initial training and yearly refresher training on each of the less lethal weapons. They also indicate that they have to experience OC spray exposure and TASER exposure before they are allowed to carry those weapons.

Additionally, each officer is questioned regarding the training they have received in the arena of decision making. All of the officers confirm that they receive training in decision making. They state they receive initial training when they go through the law enforcement officer academy as well as yearly training in law enforcement ethics, case law review, and the use of force continuum.

Decision Making Factors

In concurrence with Amendola's (1996) work, once officers are dispatched to respond to a call, they start preparing automatically for what they will encounter, and thus, start making decisions for their course of action. Each of the officers are asked what factors they take into account when deciding which less lethal weapon to employ. All of the officers think that the type of call they are responding to plays a role in their decision making. Four out of the five say that prior knowledge of the suspect is a factor that will affect their decision making. Age is a factor in determining which weapon they will choose for four out of the five officers; many of the officers reveal that age will only be a factor if it is at the extreme end of the spectrum, either very young or very old. Furthermore, two of the officers indicate that the physical stature or condition of the suspect will affect their decision making. However, only one officer shares that gender will affect their decision making. This officer points out that if he were dealing with a pregnant

female, that will affect which less lethal weapon he will choose. None of the officers indicate that race is a factor in their decision making.

As a follow-up question, each officer is asked which factor they consider to be the most important to their decision making. Three out of the five officers state the call type is the most important, whereas one reports prior knowledge of the suspect, and another responds it is the initial level of resistance. After determining the factors that affect decision making, each officer is asked if he believes his decision making is usually effective at stopping the escalation of force. All of the officers respond that they believe their decision making is effective, citing rare escalation of force, the ability to deescalate a situation, and the ability to stop an incident quickly.

Additionally, all of the officers indicate that their department allows them a high level of discretion and that their decision making is not affected by fear of disciplinary action. Based on the statements provided by the officers, the high level of training they are provided as well as the use of force policy they have adopted are thought to be responsible for the high level of discretion the officers believe they possess.

Specific Use of Force Incident

The final set of questions that each officer is asked relates to a specific use of force incident in which they were involved. Each officer is allowed time to review the “Use of Force Report” before answering any questions. This section provides a brief overview of the use of force incident in conjunction with the factors they took into account and the effectiveness of their decision making.

Officer 1- Report 101

Officer 1 reported that the information he received while responding to the call was that there was a physical disturbance involving two, if not three, men and that a firearm was involved.

Officer 1 stated that because he knew there were multiple suspects and a firearm involved, those factors led him to make the decision to employ his firearm when he arrived on the scene. He further explained that he made this decision because he took a firearm to a firearm fight. Officer 1 said that when he walked around the corner with his service weapon drawn he encountered two male suspects, who complied with his commands immediately, therefore stopping the escalation of force with those suspects. Officer 1 commented that there was a third suspect who did not comply with his commands, but rather came at him in an aggressive manner. Based upon this, Officer 1's initial decision making was not effective. Officer 1 reported that when the suspect was coming toward him he realized the suspect was unarmed. This factor led Officer 1 to transition to the TASER. Officer 1 ultimately had to deploy the TASER, which resulted in him gaining compliance from the suspect, thereby providing evidence that Officer 1's decision in choosing the second less lethal weapon was effective.

Officer 2- Report 102

Officer 2 stated that he was dispatched to a disturbance call that was reported by a 12-year-old female who had crawled out of a second story window to get away from the suspect. The 12-year-old reported that the suspect had broken down her door in attempt to get into her room and had also used violence against her mother. Officer 2 indicated that when he arrived on scene a male matching the description of the suspect answered the door. The suspect very quickly became angry toward the officer and tried to re-enter the residence, pulling away from the officer, in an attempt to get to the adult female inside the home. Officer 2 concluded that these actions, the confined space, the quickly evolving situation, and the reported violence that had already occurred led him to use hands-on control tactics. After a brief struggle, Officer 2 was

able to gain compliance from the suspect and take him into custody, therefore providing evidence that his initial decision to use hands-on control tactics was effective.

Officer 3- Report 103

Officer 3 reported that he was dispatched to a citizen encounter, an intoxicated person had walked out on his tab at a restaurant. While en-route they received another call that a person, who matched the description of the suspect from the previous call, was becoming disorderly. Officer 3 indicated that based on his knowledge of the situation, he was not planning on using any type of force. However, when the suspect was told that he was under arrest he began to fight. Officer 3 stated that he was in very close proximity, about 6 inches, to the suspect and decided to use hands-on control tactics to effect the arrest of the suspect. Officer 3's decision making was effective in that he was able to successfully arrest the suspect. Officer 3 felt that using the baton was not warranted because of the propensity for injury and the use of OC spray in such close proximity to the suspect would have led to cross contamination of all of the officers. Officer 3 continued by saying that the TASER would have been just as effective as hands-on but he didn't have the time or the space to deploy the TASER. He also pointed out that he did not believe that the department's use of force continuum would have allowed for the use of the TASER in that situation because there were two officers, the suspect was intoxicated, and the officer did not believe that he would put up a huge fight.

Officer 4- Report 104

Officer 4 stated that he had been dispatched to a call involving a male suspect who had reportedly kicked in the door to an apartment and a disturbance ensued between him and a female. Officer 4 reported that when he arrived on scene, he made the assessment that the suspect would be arrested for domestic assault. When the male suspect was told he would be

placed under arrest, they were in a second story apartment that contained a large window. The suspect stated that he was not going to jail and took a fighting stance. Officer 4 said that based on the physical environment and the suspect outweighing him by approximately 80 lbs., he decided the use of the TASER would be the most effective less lethal weapon. Officer 4 confirmed that his initial decision making was effective because after he deployed his TASER the suspect became compliant and he was able to place him under arrest.

Officer 5- Report 105

Officer 5 indicated that he observed a crowd gathered and a physical disturbance in progress, when he got into the crowd he observed two physically capable males who were approximately in their twenties fighting on the ground. Officer 5 decided that he needed to stop the fight immediately because of the large crowd and the potential for more fights erupting. Officer 5 then said it was at this point in time he realized that his partner was already dealing with another incident that had broken out within the crowd. Based upon these factors, Officer 5 deployed his TASER, which allowed him to gain control of the suspects thereby providing evidence that his decision making was effective.

Development of Grounded Theory

After coding and analyzing the officer interviews, several themes emerge, including the officer's view of their decision making and many of the factors that play a role in their decision making. However, the most interesting theme that comes about is the correlation between the weapon the officers most typically use and the weapon they believe is the most effective at stopping the escalation of force.

All of the interviewed officers report that hands-on control tactics are the less lethal weapon they utilize most often. These results confirm the quantitative finding that hands-on

control tactics are utilized in 85 out of 121 incidents (70%). Despite the fact that hands-on control tactics are the officer's preferred method of force, all of the officers stated that they thought the TASER is the most effective at stopping the escalation of force. This belief supports the quantitative finding that the TASER is effective 88% of the time.

When questioned further about what factors lead officers to utilize hands-on control tactics so frequently, four out of the five officers think that their close proximity to the suspects plays a factor in their decision to use hands-on tactics. Furthermore, two out of the five officers indicate that the events evolve so rapidly during a use of force incident that often there is no time to deploy a secondary weapon such as the TASER.

Based upon the results garnered from the officer interviews, it appears that proximity to the suspect is the driving force for officers choosing hands-on control tactics despite their acknowledgement that the TASER is the most effective weapon at stopping the escalation of force. If officers keep more distance between themselves and suspects, they will not have to use hands-on tactics, which previous research has shown to be less effective and results in more injuries to officers and suspects. Specifically, Carr (2005) reported, "Using a TASER can eliminate the need for a police officer to close the distance between himself or herself and the suspect" (p. 2).

Relating the Quantitative and Qualitative Findings

The findings of the quantitative research reveal that both the TASER and hands-on tactics are the most effective less lethal weapons at stopping the escalation of force. These findings are supported by the information gathered during the officer interviews. All of the officers that are interviewed indicate that, in their professional opinion, the TASER is the most effective less lethal weapon. The officer interviews also support the quantitative finding that hands-on control

tactics are the most popular method of less lethal force. All of the officers acknowledge that hands-on tactics are the method of force they most often use despite their belief that the TASER is the most effective.

Hypothesis Validation/Non-Validation

The following section reviews each hypothesis and indicates whether it is validated or not validated through the quantitative research findings.

1. TASER (X_1) - The use of TASERs in officer/citizen encounters will stop the escalation of force. This hypothesis is validated by the quantitative research findings through the use of chi-square, lambda measures of association, and binomial proportion tests. These tests reveal a statistically significant relationship between the method of force and the effectiveness of the force. The qualitative research findings from the officer interviews also support this hypothesis.
2. OC spray (X_2) - The use of OC spray in officer/citizen encounters will stop the escalation of force. A validation determination cannot be made due to the small sample size, which requires OC spray to be omitted from the study.
3. Baton (X_3) - The use of a baton in officer/citizen encounters will stop the escalation of force. A validation determination cannot be made due to the small sample size, which requires the baton to be omitted from the study.
4. Firearm (X_4) - The display of a firearm in officer/citizen encounters will stop the escalation of force. This hypothesis is validated by the quantitative research findings through the use of chi-square, lambda measures of association, and binomial proportion tests. These tests reveal a statistically significant relationship between the method of force and the effectiveness of the force.

5. Hands-on Tactics (X_5) - The use of hands-on tactics in officer/citizen encounters will stop the escalation of force. This hypothesis is validated by the quantitative research findings through the use of chi-square, lambda measures of association, and binomial proportion tests. These tests reveal a statistically significant relationship between the method of force and the effectiveness of the force. The qualitative research findings from the officer interviews also support this hypothesis.

Findings for Each Research Question

Research Question One

Research question one asked, what weapon, short of lethal force, is most effective in stopping the escalation of force? The chi-square test and lambda measure of association found that there is a weak but statistically significant relationship between the method of force and the dependent variable, effectiveness. Next, the binomial proportion test is conducted to determine if there is a statistically significant difference in the effectiveness of the TASER, hands-on tactics, and firearm. The z-scores reveal that there is a statistically significant difference between (1) effectiveness of the TASER and the firearm ($z=1.95$), and (2) hands-on tactics and the firearm ($z=1.95$). Although both the TASER and hands-on tactics tout high rates of effectiveness, the z-score (0.4) indicates that there is not a statistically significant difference between these two methods. Based upon these quantitative findings, a clear-cut determination cannot be made as to which single less lethal weapon is the most effective. Rather, the quantitative findings support identifying both the TASER and hands-on tactics as the most effective weapons at stopping the escalation of force. Officers 1, 2, and 3 stated that many times the TASER works as a deterrent, and the actual deployment is often unnecessary. Officers 4 and 5 did not provide any explanation of why they felt the TASER was most effective.

However, the qualitative findings from the officer interviews reveal a different conclusion. During the interviews, each officer is asked which less lethal weapon they think is the most effective at stopping the escalation of force. All of the officers believe that, because of their professional experience, the TASER is the most effective weapon.

Research Question Two

Research question two seeks to determine what factors officers take into account in choosing a particular weapon and why. This question is answered through the information collected from the officer interviews. Each officer is specifically asked what factors they take into consideration when they are making a decision regarding which less lethal weapon to use. One hundred percent of the officers interviewed acknowledge the type of call they are responding to plays a factor in their decision making regarding their choice of which less lethal weapon to employ. In fact, three out of five (60%) think that this is the most important factor for them. Four out of five believe that age, when it is on either extreme end of the spectrum, plays a role in their decision making during use of force incidents. Likewise, four out of five officers indicate that prior knowledge of the suspect affects their decision making during use of force incidents. Physical condition and stature of the suspect are named as a factor by two officers, while only one officer points out that gender is considered. None of the officers that are interviewed say that the race of the suspect plays any role in their decision making. When answering these questions, none of the officers tell why they take a certain factor into account. However, throughout the course of the interviews each officer makes statements that allow for inference as to why certain factors play a role in their decision making.

Relating the Findings to Theory

The quantitative research findings are related to the major characteristics of the street-level bureaucrat construct including the high level of discretion that street-level workers possess and the ability and need to handle each situation individually. This relationship is evidenced by the high level of variation in the frequency of the type of weapon chosen by the officer. When an officer is involved in a use of force incident, each situation is handled uniquely and decisions are made based on the situation's characteristics. The qualitative results are insightful into understanding how officers exercise their discretionary power when attempting to resolve use of force incidents. Additionally, the qualitative results are related to the focal concerns perspective, specifically, what did the officers use as their perceptual shorthand during the particular incident that influenced their decision making regarding which less lethal weapon to employ. The information gathered from the interviews suggests that an integral part of the officer's perceptual shorthand is the type of call to which the officer is responding. Other factors that the officers use in their perceptual shorthand include: age, prior knowledge of the suspect, the physical condition/stature of the suspect, in some instances the gender of the suspect, and the proximity to the suspect.

Summary

The quantitative results show a weak but statistically significant relationship exists between the method of force used and the effectiveness/ineffectiveness at stopping the escalation of force. Furthermore, it is determined that the TASER and hands-on tactics are the most effective at stopping the escalation of force. The qualitative results indicate that while the officers interviewed believe the TASER is the most effective weapon at stopping force, they actually use hands-on tactics most frequently during use of force incidents. The qualitative

analysis also indicates that officers are often times in very close proximity to the suspects, which partially explains why they choose hands-on tactics so frequently. Other factors that play a role in this decision making include: the sudden and unexpected onset of force, a lack of time to utilize other methods of force, and the incident does not meet the criteria for OC spray, baton, or TASER use. Finally, the qualitative results shed light on which factors the officers use as their perceptual shorthand in making a decision regarding which method of less lethal force to employ.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

This chapter begins by providing a brief summary of the research, followed by a discussion of the study's implications for the theoretical framework. Also discussed are the contributions that this research makes to the scholarly literature on less lethal weapons, officer decision making, the focal concerns perspective, and the street-level bureaucrat construct. Finally, this chapter presents discussion of suggestions for improving existing policies/practice, along with recommendations for future research.

Summary of the Research

This research employs "Use of Force Reports" and officer interviews to answer the following research questions: (1) what weapon, short of lethal force, is most effective in stopping the escalation of force and (2) what factors do officers take into account in choosing a particular weapon and why. This study uses a convergent mixed method design to answer research question one, while a purely qualitative design is employed to answer research question two.

With regard to research question one, the quantitative findings show that both the TASER and hands-on tactics are the most effective weapons at stopping the escalation of force. The results also show that there is not a statistically significant difference between the effectiveness of the TASER and the effectiveness of hands-on tactics. Each method is equally effective in stopping the escalation of force. The qualitative results, analyzed using the constant comparative method, reveal slightly different results. During the interviews, officers indicate that hands-on tactics are the method of force that they most often use; however, all officers believe that the TASER is the most effective less lethal weapon at stopping the escalation of force. Although the

qualitative findings differ slightly from the quantitative findings, they still corroborate the initial findings from the quantitative analysis.

One major theme is apparent from the qualitative data. When officers were questioned about why they chose to use hands-on tactics so frequently, four out of five said it was because of the close proximity they had with the subject. Additionally, the officers believed that time played a role in their decision to employ hands-on tactics. Based on this emerging theme, proximity to the subject and time constraints appear to be the driving force behind officers' decisions to move to hands-on tactics, even though the officers do not believe it is the most effective weapon.

The qualitative findings provide insight by revealing additional (or unanticipated) factors that officers use when determining which less lethal weapon to employ, the focus of research question two. Officers believe that call type, prior knowledge of the suspect, the physical condition/stature of the suspect, age (when it is at either extreme end of the spectrum), proximity to the suspect, and occasionally, the gender of the suspect are factors they consider when deciding which method of force to employ.

Implications for Theory and Contributions to the Scholarly Literature

The street-level bureaucrat construct depicts street-level bureaucrats as people who work at a job with high levels of discretion, have regular interaction with citizens, and are ideally trained to respond to individual needs and circumstances (Lipsky, 2010). The findings of this research are consistent with the characteristics provided by the street-level bureaucrat construct and provide further support of the research that has been previously conducted (e.g., Lipsky, 1971; Lipsky, 2010; Maynard-Moody and Musheno, 2000). The findings of this study reveal that there is a great deal of variation regarding which method of force officers choose during use of

force incidents. As street-level bureaucrats, officers use discretion when making decisions about which method of force they will employ during use of force incidents. This is demonstrated by officers' descriptions of use of force incidents. Each officer used a different approach that fit the unique circumstances of the incident in order to resolve it. The qualitative results are also consistent with the major thrust of the street-level bureaucrat construct, as all five officers believe that their superiors afford them a high level of discretion and that their decisions are not affected by the fear of disciplinary action.

The research findings for the qualitative portion of the study contribute to the literature on the focal concerns perspective, specifically the work of Skolnick (2011), who states:

Police officers, because their work requires them to be occupied continually with potential violence, develop a perceptual shorthand to identify certain kinds of people as symbolic assailants, that is, as persons who use gesture, language, and attire that the police have come to recognize as a prelude to violence. (p. 42)

The current study seems to confirm Skolnick's claims regarding symbolic assailants. However, it also adds to the focal concerns perspective because it provides evidence that police officers utilize a perceptual shorthand when making decisions regarding which less lethal weapon to employ during use of force incidents. The shorthand is developed based on the context of the situation. This is evidenced by Officer 4 stating, that because the suspect outweighed him by 80 pounds, he determined that using the TASER would be the safest, most effective way to bring the incident to a close. Thus, Officer 4 used the suspect's physical stature, as well as other factors, including the location of the incident (they were in a 2nd story apartment that contained a large window) in his perceptual shorthand. In another example, Officer 1 indicated that he was dispatched to a "disturbance call with firearms." The officer indicated that based on the

information he received about the call he immediately drew his firearm when he arrived on scene. The statements from Officer 1 indicate that the call type was considered in his perceptual shorthand. Additionally, this research sheds light on the factors that officers do not use in their perceptual shorthand. Specifically, none of the officers indicated that the race of the suspect was part of their perceptual shorthand. Furthermore, only one officer indicated that gender would be used in his perceptual shorthand. This officer explained that the only time gender would play a role is if he were dealing with a pregnant female.

A thorough review of the literature shows that there is an important gap in the research, specifically in the area of what is the most effective less lethal weapon at stopping the escalation of force (Mesloh, Henych, and Wolf, 2008). The quantitative findings of this research serve to fill a portion of the gap in the existing literature by providing evidence that both the TASER and hands-on tactics are the most effective methods for stopping the escalation of force. The qualitative findings also support identifying the TASER and hands-on tactics as being the most effective weapon. All of the officers interviewed indicated that hands-on was the method of force they use most often but they also believed the TASER was the most effective method at stopping the escalation of force.

Additionally, the information gathered during the officer interviews serves to add to the scholarly literature regarding officer decision making. Amendola (1996) suggested that there is a need for a comprehensive, descriptive model depicting the variables that will affect an officer using force. While this study does not develop a complete model to explain officer decision making during use of force incidents, however, it does provide insight into specific factors that officers do or do not take into account when making decisions regarding use of force incidents. The data from the officer interviews reveals that when developing a perceptual shorthand,

officers use the following factors: call type, prior knowledge of the suspect, the physical condition/stature of the suspect, age (when it is at either extreme end of the spectrum), proximity to the suspect, and occasionally, the gender of the suspect are factors they consider when deciding which method of force to employ.

The qualitative findings add to the existing knowledge base by revealing an area of concern regarding officer decision making. When officers were questioned about the factors that influenced their decision to utilize hands-on tactics, they indicated that time and their proximity to the suspect had an impact on this decision. These influencing factors caused officers to utilize hands-on tactics even though they do not believe they are the most effective weapon and studies have shown that they increase the likelihood of officer and suspect injuries (Travis, Chaiken, and Kaminski, 1999; Smith et al., 2010).

Finally, Crow and Adrion (2011) state, “Although a vast body of research in policing exists much of that work is evaluative, applied research, or simply lacks a theoretical basis” (p. 370). By employing a theoretical framework, this research adds to the existing collection of scholarly research focusing on police use of force.

Policy Recommendations

Based on the research findings, two specific areas of policy recommendations are discussed. The first policy recommendation is based on the officers’ understanding of the use of force policy—and exactly when less lethal weapons can be used. Although all officers interviewed indicate they receive yearly training pertaining to use of force, there is variation in the officers’ answers about why they chose hands-on tactics. The difference in the officer’s choices can be directly attributed to the discretionary power afforded by the street-level bureaucrat construct. After analyzing the interviews, it is apparent that officers use their

discretionary power to choose a less lethal weapon based on their interpretation of the department's use of force policy. For example, one officer used hands-on tactics with a suspect who had actively resisted arrest by fighting. The officer believed that use of the TASER would not be allowed by department policy because there was more than one officer on scene. Also, Officer 3 (2014) stated, "He wasn't going to, you know, put up a huge fight or anything." However, according to Alpha City Handbook, (2011) an intermediate weapon may be used when verbal dialogue has failed, when a subject has signaled an intent to actively resist, or when the officer perceives that hands-on control tactics have not or will not be effective. Despite the officer's use of discretion in choosing hands-on tactics, the facts pertaining to this incident indicate that the suspect's behavior could also have warranted the use of the TASER.

During a different interview, there is further evidence of the different interpretations of the department's use of force policy. An officer said that entire levels of force might be skipped depending on the circumstances of the call. This officer indicated that the use of force continuum is no longer viewed as a ladder model and an officer only has to be able to justify their use of force. A third officer, when questioned about the method of force he most often uses stated that he uses hands-on tactics the most because of where it falls on the use of force continuum and that the TASER is second on the continuum. This officer's answer further illustrates the use of discretionary power when choosing a less lethal weapon based on the interpretation of departmental policy.

Each of the officer's responses indicate that more frequent training on the use of less lethal weapons and departmental policy would enhance officers' decision making during use of force incidents. Based on the high level of officer discretion, it is imperative that on going training in the area of less lethal weapon usage be conducted. Therefore, the first policy

recommendation is to provide officers with more on going training relating to when less lethal weapons can be used. It is recommended this training take a two-step approach. The first step will consist of officers engaging in situational role-play training that would simulate an actual use of force incident. After they have completed the role-play exercise the officers would be involved in a debriefing that consists of a discussion of the exercise and an evaluation of their performance. This aspect of the training could be completed during the time the officers are participating in the required quarterly firearm qualification. The second step of the approach will consist of officers taking part in a bi-weekly automated computer-based training program that could consist of officers watching videos, reading case studies, and reviewing case law, statutes, and department policy. After reading or watching the material, the officer would then be required to answer questions pertaining to the material they viewed. How officers answer the questions would be used to inform future department in-service training.

Although this study interviewed officers from one agency, it would be worthwhile for other agencies to examine their officers' knowledge and understanding of their department's use of force policy. Other agencies can also utilize the same two-step approach that is recommended to enhance the decision making of their officers.

The second policy recommendation is based upon information the officers provided regarding which method of force they most often use and why. All officers claimed that they use hands-on tactics the most, and four out of five thought it was because of proximity to the suspect. One officer said that he chooses hands-on tactics to gain distance between him and the suspect so he can transition to a secondary weapon such as OC spray or the TASER. Therefore, the second policy recommendation is to provide more training focusing on maintaining a safer distance between officers and suspects. This training can be included in the two-step approach suggested

above. The purpose of proximity training would be to emphasize the advantages of maintaining appropriate distance between the officer and the suspect. Additional training on this distance, which could be considered an *antecedent condition* to choosing a less lethal weapon, would allow the officers to more safely use such weapons. Maintaining appropriate distance could also reduce the likelihood that an officer would engage in hands-on tactics, a method which has been shown to result in higher numbers of officer and suspect injuries (Travis, Chaiken, and Kaminski, 1999; Carr, 2005; Smith et. al., 2010).

Recommendations for Future Research

One of the research questions this study answered was what weapon, short of lethal force, is most effective in stopping the escalation of force. This study finds, through the use of quantitative analysis, that the TASER and hands-on tactics are the most effective methods of stopping the escalation of force. This finding, however, is regarding a general use of force incident, in which the call type is not considered. Future research should examine what type of less lethal weapon is the most effective at stopping the escalation of force during use of force incidents involving specific call types (e.g., Which type of less lethal weapon is the most effective at stopping the escalation of force during a domestic violence call?). Although the findings of this research study will provide officers with the knowledge of the most effective less lethal weapon in general, an expansion of this research to include specific call types will provide officers with greater knowledge. The suggested research would involve coding “Use of Force Reports” in much of the same way they were coded for this study; however, the initial call type would need to be determined and coded. After the “Use of Force Reports” are coded, they would be subjected to binary logistic regression analysis. The following variables create a general model for this analysis. The dichotomous dependent variable would be coded as stopping the

escalation of force or not stopping the escalation of force. The first category of independent variables could include the following call types: disturbance, domestic, traffic offense, citizen encounter, burglary, and robbery. The second category would include the following methods of force: TASER, hands-on tactics, firearm, OC spray, and baton.

The qualitative findings of this research have led to many different questions surrounding less lethal weapons and decision making that are worthy of future research. The most intriguing topic that surfaced during this research is the issue of distance between the officer and the suspect. Based upon this finding, a thorough examination of proximity and the use of force is worthy of future research. Questions this research should seek to answer are:

1. Is there a correlation between call type and proximity to the suspect (i.e., are officers more likely to allow themselves to get in close proximity to a suspect if they are responding to a non-violent incident such as a welfare check, public intoxication, or a traffic accident)?
2. Does close officer/suspect proximity account for the high occurrence of hands-on tactics used?
3. Is there a correlation between officer/suspect proximity and injuries sustained as a result of the ensuing use of force?

Additionally, this study should be replicated in a city/county with a population that is large enough to examine the effectiveness of male officers' versus female officers' initial decision making. Also, comparisons regarding which weapon is most effective when used by male officers versus female officers should be made. Furthermore, the study should evaluate which less lethal weapon is the most effective at stopping the escalation of force during incidents involving female suspects.

Another area of future research should include an examination of the accuracy of information regarding the call type that dispatchers relay to responding officers. This is an area of needed research because, based on the findings of this study, the dispatch information that officers receive affects their perceptual shorthand. If officers receive inaccurate information, then their initial decision making is more likely to be ineffective.

A final recommendation of future research involves duplicating this study using data from other police departments in cities with an approximate population of 75,000 to generalize the findings of this study. Additionally, a survey instrument should be created that utilizes closed ended questions to ascertain which method of force officers most frequently use as well as which method they believe is the most effective at stopping the escalation of force. This survey should be given to all officers across an entire department in order to gain a more complete understanding of their preference of weapon and the weapon they believe is the most effective.

Summary

This research adds to the theoretical framework by expounding on the focal concerns perspective work that was conducted by Skolnick (2011). While Skolnick's (2011) work focuses on the use of perceptual shorthand to identify symbolic assailants, the findings of this study reveal that officers use perceptual shorthand during use of force incidents to determine which less lethal weapon to employ. It also provides factors that officers do and do not use in their perceptual shorthand when making decisions regarding use of force incidents. The findings are consistent with the tenants of the street-level bureaucrat construct, in that the officers acknowledge high levels of discretionary power without the fear of disciplinary action.

By determining that the TASER and hands-on tactics are the most effective less lethal weapons at stopping the escalation of force, this study helps to fill a gap in the scholarly research.

This study also provides insight into the factors that officers take into account during use of force incidents, thereby adding to the scholarly research in the area of officer decision making.

Finally, this research provides officers, their supervisors, and policymakers with additional knowledge pertaining to less lethal weapon choices and officer decision making. It is clear, however, that there is still work to be done in the area of use of force and officer decision making. As a result, policy recommendations, specifically, training in the areas of interpreting use of force policy, and officer/suspect proximity, are made in order to assist law enforcement agencies in developing training for their officers.

Several areas for future research are also recommended; specifically, research that determines which less lethal weapon is the most effective at stopping the escalation of force during specific call types. Based upon the findings of this study, a thorough examination of officer/suspect proximity is also recommended. Research pertaining to the effectiveness of male officers' versus female officers' initial decision making and comparisons regarding which weapon is most effective when used by male officers versus female officers should also be conducted. Furthermore, research should evaluate which less lethal weapon is the most effective at stopping the escalation of force during incidents involving female suspects. A final area of future research that is derived from the findings of this study is evaluating the accuracy of information that officers receive from dispatchers.

In conclusion, police officers' actions are under constant scrutiny by the public and the media. This is true now more than ever in light of recently occurring events such as those in Ferguson, MO; New York City, NY; Cleveland, OH; and Madison, WI involving use of force incidents that escalated to the use of lethal force. In light of these events, pressure for an officer's decision making to be accurate and effective is higher than ever. This study provides officers and

policymakers with knowledge and training recommendations that are needed in order to ensure that use of force incidents are resolved in the quickest and safest manner possible.

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APPENDIX A

DEFINITIONS

The following list of definitions is provided to help promote a better understanding of the topic and research. For some of the terms outlined, there are no universally accepted definitions. Terminology can vary in usage from department to department and geographically from region to region. For the purpose of this study, the following definitions are used.

1. Escalation of Force: Movement from one method of force to another when the initial method of force was unsuccessful.
2. Expandable Baton: A modified version of the traditional straight police baton. The expandable baton was designed to collapse, making transportation and concealment easier. The expandable baton is a multiple level force option ranging from implied force to deadly force (Johnston, 1996).
3. Focal Concerns Perspective: A theory originally designed to explain how judges make sentencing decisions using three main focal concerns: (1) the blameworthiness or culpability of the offender; (2) the need to protect the community or the perceived dangerousness of the offender; and (3) consequences and practical constraints of sentencing decisions (Hartley, Maddan, and Spohn, 2007). Skolnick (2011) related to the Focal Concerns Perspective to explain the decision making of law enforcement officers.
4. Hands-On Control Tactics: Tactics in which an officer uses his or her body in an attempt to gain suspect compliance. This includes both soft empty hand control and hard empty hand techniques.
5. Hard Empty Hand Control Tactics: Techniques designed to control suspects who are actively aggressive. These tactics can also be used to control suspects who are

defensively resisting when other lower forms of control have failed. These control tactics can be delivered using the officer's open hand, fist, forearm, leg, or foot (Alpha City Handbook, 2011, p. 2).

6. Less Lethal Force: Force that decreases the odds of deadly injury (Mesloh, Wolf, Henych, and Thompson, 2008; Mesloh, Henych, and Wolf, 2008).
7. Lethal Force: Force which may cause death or grave injury or that creates a degree of risk that a reasonable and prudent person would consider likely to cause death or grave injury (Alpha City Handbook, 2012, p. 1).
8. Oleoresin Capsicum Spray (OC spray): An irritant spray, made from the oils of hot peppers, that attacks the eyes, nose, skin, and bronchial passages (Mesloh, Henych, and Wolf, 2008; Morabito and Doerner, 1997).
9. Perceptual Shorthand: A means of quickly making decisions based on stereotypical assessments such as gestures used, language used, and attire worn (Crow and Adrion, 2011; Skolnick, 2011).
10. Soft Empty Hand Control Tactics: Tactics designed to control passive or defensive resistance. They are used when verbal direction/commands are not effective, or in other words when there is non-compliance with lawful orders. These techniques include strength techniques, joint locks, pressure points, or distraction techniques such as hand and leg strikes to specific motor nerve points (Alpha City Handbook, 2011, p.1).
11. Street-Level Bureaucrat: A public service worker that interacts directly with citizens through the course of his or her job, exercises a high level of discretion, and makes decisions that can have a great impact on the public (Lipsky, 2010; Lovrich, Steel, and Majed, 1986).

12. TASER: a type of less lethal weapon that temporarily causes loss of muscle control as a result of an electric current passing through the body (Government Accountability Office, 2005; Mesloh, Wolf, Henych, and Thompson, 2008; Mesloh, Henych, and Wolf, 2008). It should be noted that throughout previously conducted research, the terms Thomas A. Swift's Electric Rifle (TASER), Conducted Energy Weapons (CEW), and Conducted Energy Device (CED) are used interchangeably. For the purpose of this study, TASER will be used to refer to any CEW or CED.
13. Use of Force: the amount of effort required by police to compel compliance by an unwilling subject (National Institute of Justice, 2012).
14. Use of force incident: An incident that occurs between a law enforcement officer(s) and a suspect(s) in which the officer(s) must use some sort of force to gain control of the situation or suspect.
15. Use of Force Report: A report that is completed and submitted by officer(s) who are involved in a use of force incident.

APPENDIX B

INTERVIEW GUIDE PROTOCOL

Interview Guide Protocol

Introduction

Title of Project: Police/Citizen Encounters: An Examination of Less Lethal Weapons and Their Effectiveness.

Hello (respondent name), my name is Michael Moyer. Thank you for your willingness to participate in this study. This study will seek to uncover why force escalates in police/citizen encounters. Specifically, what weapon, short of lethal force, is most effective in stopping the escalation of force and what factors officers take into account in choosing a particular weapon and why. The research will focus specifically on a police department's use of force incidents.

Probing questions may arise during the interview based upon your responses to my questions.

As a voluntary participant, do you agree to the audio recording of this interview?

Background Information on Interviewee

Date:

Name:

Note: Your name will only be used if there are any questions or clarifications needed on any of your answers, and it will not be included in the research records.

Once the data collection is complete, the list that connects your name to your interview responses will be destroyed, and all data will be anonymous.

What is your title/position and how long have you worked for the police department?

What are the primary functions of your job?

The first set of questions is general questions relating to less lethal weapons and training.

1. What less lethal weapons does the police department issue to you?
2. What types of trainings are you required to complete in order to carry and utilize the department issued less lethal weapons?
3. Do you utilize all of the less lethal weapons that are issued?

4. Which weapon do you utilize most in use of force incidents and why?
5. Which weapon do you believe is the most effect at stopping the escalation of force and why do you believe this?

The next set of questions is about your decision-making.

1. What type of training have you received pertaining to decision-making in use of force events?
2. What factors, such as: call type, prior knowledge of suspect, race, gender, age, etc., do you take into account when deciding which less lethal weapon to employ?
3. Which of the above factors do you consider the most important in your decision-making?
4. Does your agency allow you a high level of discretionary power when deciding which less lethal weapon to use?
5. Do you believe your decision-making is effective at stopping the escalation of force or do you normally have to resort to a higher level of force?
6. Is your decision-making ever affected by a fear of disciplinary action? Please explain.

The final set of questions focuses on a specific use of force event (Insert generic case number) that you were involved in. You will be allowed time to review the report before answering questions.

1. What information (e.g., call type, age, race, gender, etc.) did you have knowledge of while you were responding to this call?
2. What factors led you to making the initial decision regarding which less lethal weapon to use?
3. Was your initial decision-making effective at stopping the escalation of force?
4. If your initial decision-making was not effective, what factors did you take into account in choosing the second less lethal weapon to apply?

Wrap-up.

Thank you for your time, participation, and insight.

APPENDIX C

IRB APPROVAL



Office of Research Compliance
Institutional Review Board

July 3, 2014

MEMORANDUM

TO: Michael Moyer
Valerie Hunt

FROM: Ro Windwalker
IRB Coordinator

RE: PROJECT MODIFICATION

IRB Protocol #: 13-04-678

Protocol Title: *Police/Citizen Encounters: An Examination of Less Lethal Weapons and Their Effectiveness*

Review Type: ☐ EXEMPT ☒ EXPEDITED ☐ FULL IRB

Approved Project Period: Start Date: 06/28/2014 Expiration Date: 05/09/2015

Your request to modify the referenced protocol has been approved by the IRB. This protocol is **currently approved for 20 total participants**. If you wish to make any further modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior* to implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

Please note that this approval does not extend the Approved Project Period. Should you wish to extend your project beyond the current expiration date, you must submit a request for continuation using the UAF IRB form "Continuing Review for IRB Approved Projects." The request should be sent to the IRB Coordinator, 210 Administration.

For protocols requiring FULL IRB review, please submit your request at least one month prior to the current expiration date. (High-risk protocols may require even more time for approval.) For protocols requiring an EXPEDITED or EXEMPT review, submit your request at least **two weeks** prior to the current expiration date. Failure to obtain approval for a continuation *on or prior* to the currently approved expiration date will result in termination of the protocol and you will be required to submit a new protocol to the IRB before continuing the project. Data collected past the protocol expiration date may need to be eliminated from the dataset should you wish to publish. Only data collected under a currently approved protocol can be certified by the IRB for any purpose.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or irb@uark.edu.

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