

9-2022

Evaluating the Panoptic Deterrent Effect of Skywatch Surveillance Towers: A Mixed Methods Analysis

Penny M. Geyer

Follow this and additional works at: <https://digitalcommons.newhaven.edu/dissertations>



Part of the [Criminology and Criminal Justice Commons](#)

THE UNIVERSITY OF NEW HAVEN

EVALUATING THE PANOPTIC DETERRENT EFFECT OF SKYWATCH
SURVEILLANCE TOWERS: A MIXED METHODS ANALYSIS

A DISSERTATION

submitted in partial fulfillment

of the requirements for the degree of

DOCTOR OF PHILOSOPHY CRIMINAL JUSTICE

BY

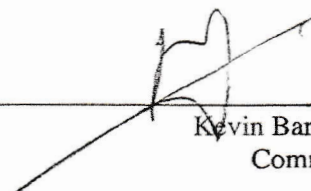
Penny M. Geyer

University of New Haven
West Haven, Connecticut
September 2022

EVALUATING THE PANOPTIC DETERRENT EFFECT OF SKYWATCH

SURVEILLANCE TOWERS: A MIXED METHODS ANALYSIS

APPROVED BY



Kevin Barnes-Ceeney, Ph.D.
Committee Chairperson

Lior Gideon

Lior Gideon, Ph.D.
Committee Member

Michelle Fabiani

Michelle Fabiani, Ph.D.
Committee Member

Peter Moskos

Peter Moskos, Ph.D.
Committee Member

Maria Tcherni-Buzzeo

Maria Tcherni-Buzzeo, Ph.D.
Ph.D. Program Director

Mario Gaboury

Mario Gaboury, J.D., Ph.D.
Dean of the College

Nancy Savage

Nancy Savage, Ph.D.
Interim Provost

DEDICATION

To my loving husband Gerry, who kept me steady as I went, held my head up when it did not want to hold up, and made sure I did not leave my dreams in a box until a quieter time.

To my daughter Kelsee, who reminded me when I was struggling, that even in the darkest of times I could find happiness if I just remembered to turn on a light.

ACKNOWLEDGEMENTS

I want to first thank my dissertation chair, **Dr. Kevin Barnes-Ceeney**, who has been my mentor and fellowship faculty advisor since the first day I started in the doctoral program. Dr. Barnes-Ceeney's vast knowledge, particularly of theory and qualitative research, is extensive, and I have spent the last four years trying to absorb all he has to share. In fact, this entire dissertation rests on one comment he made to me the first time we met: "For your research, do you want to study genocide in Rwanda, or a policing surveillance strategy called SkyWatch?" From that moment on I became dedicated to understanding the deployment and utilization of SkyWatch surveillance towers through numerous theoretical lenses, while also striving to evaluate the towers' effectiveness as a crime prevention tool. Without his continued support and guidance, this dissertation would not have been possible.

I am also extremely grateful to **Dr. Michelle Fabiani** for her assistance in both streamlining my dissertation, as well also showing me how I have numerous directions for future research springing from this foundation. To **Dr. Lior Gideon** I extend the utmost appreciation for his direction of my methods and data analysis in this study. Additionally, his feedback and organizational suggestions taught me how to allow my work to flow and have given me skills I will carryover as I pursue a career in academia. Lastly, a tremendous thank you to **Dr. Peter Moskos**, who while even on sabbatical agreed to be a member of my committee. His immense policing knowledge and experience were essential for this dissertation as he kept me focused on reaching my target audience: law enforcement personnel.

I additionally want to thank several faculty members, **Dr. Maria Tcherni-Buzzeo**, **Dr. Mirlinda Ndrecka**, and **Dr. David Myers**, who have been invaluable sources of support and counsel throughout my doctoral pursuit. At the non-faculty level, I would like to acknowledge

those classmates of mine, **Tim Daty**, **Michele Vittorio**, and **Paul Klee**, who were always there not only with encouraging words, but also their statistical and mapping expertise. Also, a special thank you to **Jehad Alyahya** who had the patience to convert a mountain of data so that I could analyze it.

Finally, to my friends and family. I owe you all a depth of gratitude that cannot be expressed in words. From my daily morning texters of support, Mom and Victoria, to my stepdaughter, Gillian, who always said my own dedication to succeed inspired hers. To my dad who gave me the strongest DNA gene for stubbornness there is, thank you. While I cannot mention all family, friends, and faculty here please know you are appreciated. It is because of everyone that I never gave up and have ultimately succeeded in the pursuit of my doctoral degree.

ABSTRACT

The internalization of an all-seeing gaze is an important component of crime control, whether in the form of suitable guardians, place managers, or meticulous surveillance ceremonies. Specifically, panoptic technologies have the potential to “normalize” behaviors through visible yet unverifiable surveillance. Although marketed as a technology that deters crime, SkyWatch surveillance towers’ actual deterrent effect has never been empirically evaluated. Such an assessment is critical not only from a crime reduction perspective, but also one of cost-effectiveness as these towers cost hundreds of thousands of dollars.

Utilizing a sequential triangulation mixed method procedure, information from 21 semi-structured interviews was combined with the analysis of crime rates from five different jurisdictions with 23 locations of SkyWatch towers across the United States, to fill a gap between anecdotal stories of these surveillance towers’ deterrent capabilities and absent statistical data. Utilizing the daily average number of calls for service as a proxy for criminal activity, statistical analysis was conducted in a quasi-experimental pre- and post-experimental design with follow-up to assess the towers’ deterrent effect within the five jurisdictions. Analysis of calls for service specifically relating to property crimes, crimes against persons, thefts *of* motor vehicles, and thefts *from* motor vehicles when a tower was deployed versus when one was not, were also conducted.

Throughout, the theoretical underpinnings of deterrence theory and routine activities theory were utilized to analyze whether deployment of SkyWatch towers had a deterrent effect. Findings from the qualitative phase demonstrated a strong law enforcement personnel belief in the SkyWatch tower being an effective crime prevention strategy, however the quantitative results were mixed and varied across the five jurisdictions evaluated. Areas for future research,

particularly at a single jurisdictional level with a more nuanced analysis of tower-by-tower deployment, are suggested. Additionally, policy implications relating to the visibility of police, crime reduction, and cost-efficiency among others are outlined.

TABLE OF CONTENTS

DEDICATION	iii
ACKNOWLEDGEMENTS	iv
ABSTRACT	vi
List of Tables	xiii
List of Figures	xv
CHAPTER ONE: INTRODUCTION	1
A Discussion of Panopticism	3
Purpose of this Study	6
CHAPTER TWO: CRIMINOLOGICAL THEORIES AND SKYWATCH TOWERS.....	10
Deterrence Theory	11
General and Specific Deterrence	11
Absolute and Marginal Deterrence	13
Perceptual Deterrence	14
Deterrence Decay	15
Critiques and Limitations of Deterrence Theory.....	16
Deterrence Theory and SkyWatch Towers	17
Routine Activities Theory	18
Critiques and Limitations of Routine Activities Theory	21
Routine Activities Theory and SkyWatch Towers.....	22
Surveillance Theories	22
Panopticon.....	23
SkyWatch Towers and Their All-Seeing Gaze	24
Post-Panopticon.....	25
Contemporary Surveillance Theories.....	28
<i>Alternative Opticons</i>	28
<i>Participatory Surveillance</i>	32
SkyWatch Towers and Surveillance Theories	33
Summary and Conclusion	33
CHAPTER THREE: LITERATURE REVIEW.....	36
Surveillance: Closed-Circuit Television	38
Implementation Barriers for Effectiveness	43
Perceptions of Safety.....	44

The Future of Closed-Circuit Television	46
Summary and Conclusion	48
CHAPTER FOUR: METHODOLOGY	50
Sequential Triangulation	53
Exploratory Sequential Mixed Methods Design	55
Research Questions (Qualitative)	56
Data Collection (Qualitative)	56
Saturation	59
Interview Protocol and Procedure	60
Data Analysis (Qualitative)	62
Line-by-line Coding	62
Constant Comparison Method	64
Summary (Qualitative)	66
Research Questions (Quantitative)	67
Research Hypotheses (Quantitative)	69
Data Collection: Quantitative	71
Data Analysis: Quantitative	76
Descriptive Analysis	76
Bivariate Analysis	76
<i>Independent Samples T-Tests</i>	77
Summary (Quantitative)	77
CHAPTER FIVE: QUALITATIVE FINDINGS	79
Positionality Statement	79
Findings: Qualitative	80
Surveillance	89
<i>Panopticism, Omnipresence, and Policing</i>	90
Community Safety	91
Potential Impact on Crime	91
<i>Deterrence</i>	91
Community/Business Feelings	93
CHAPTER SIX: QUALITATIVE DISCUSSION AND CONCLUSIONS	98
Discussion: Qualitative	98

Conclusions: Qualitative	103
CHAPTER SEVEN: QUANTITATIVE RESULTS.....	105
Results (Quantitative).....	105
Descriptive Statistics	108
All States	111
<i>Overview of All States</i>	112
<i>Calls for Service</i>	112
<i>Crimes Against Person</i>	112
<i>Crimes Against Property</i>	113
<i>Theft of Motor Vehicle</i>	113
<i>Theft from Motor Vehicle</i>	114
Montgomery, Alabama.....	116
<i>Overview of Montgomery, Alabama</i>	116
<i>Calls for Service</i>	116
<i>Crimes Against Person</i>	117
<i>Crimes Against Property</i>	117
<i>Theft of Motor Vehicle</i>	117
<i>Theft from Motor Vehicle</i>	118
<i>Individual Deployment Locations- Calls for Service</i>	121
Aventura, Florida	126
<i>Overview Aventura, Florida</i>	126
<i>Calls for Service</i>	126
<i>Crimes Against Person</i>	127
<i>Crimes Against Property</i>	127
<i>Theft of Motor Vehicle</i>	127
<i>Theft from Motor Vehicles</i>	128
<i>Individual Deployment Locations- Calls for Service</i>	130
Charlotte-Mecklenburg, North Carolina	133
<i>Overview of Charlotte-Mecklenburg, North Carolina</i>	133
<i>Calls for Service</i>	134
<i>Crimes Against Person</i>	134
<i>Crimes Against Property</i>	134

<i>Theft of Motor Vehicle</i>	135
<i>Theft from Motor Vehicle</i>	135
<i>Individual Deployment Locations- Calls for Service</i>	137
Bedford, Texas	141
<i>Overview of Bedford Texas</i>	141
<i>Calls for Service</i>	141
<i>Crimes Against Person</i>	142
<i>Crimes Against Property</i>	142
<i>Theft of Motor Vehicle</i>	142
<i>Theft from Motor Vehicle</i>	143
<i>Individual Deployment Locations- Calls for Service</i>	145
Garland, Texas	148
<i>Overview Garland Texas</i>	148
<i>Calls for Service</i>	148
<i>Crimes Against Person</i>	149
<i>Crimes Against Property</i>	149
<i>Theft of Motor Vehicle</i>	149
<i>Theft from Motor Vehicle</i>	150
<i>Individual Deployment Locations- Calls for Service</i>	153
Independent Samples T-tests.....	157
CHAPTER EIGHT: DISCUSSION AND CONCLUSIONS	160
Discussion (Quantitative)	160
Calls for Service	162
Crimes Against Person	164
Crimes Against Property	165
Theft of Motor Vehicle.....	166
Theft from Motor Vehicle	167
Conclusions (Quantitative).....	168
CHAPTER NINE: LIMITATIONS	171
Limitations: Qualitative.....	171
Limitations (Quantitative).....	176
Future Research.....	179

Policy Implications.....	180
Conclusion.....	183
References	186
Appendix A	218
Additional Applicable Theories	218
Rational Choice Theory	218
<i>Critiques and Limitations of Rational Choice Theory</i>	221
<i>Rational Choice Theory and SkyWatch Towers</i>	222
Situational Crime Prevention	222
Criticisms and Limitations of Situational Crime Prevention	226
Situational Crime Prevention and SkyWatch Towers.....	227
Appendix B.....	229
SkyWatch Recruitment Letter.....	229
Appendix C.....	230
Consent Form	230
Appendix D	233
Interview Protocol	233
Appendix F	235
Excerpt from Memoing (Qualitative).....	235

List of Tables

Table 1: Descriptions of Alternative Opticons	29
Table 2: Open Coding (Line-by-line Coding)	63
Table 3: An Example of Themes and Subthemes Found in the Utilization and Deployment of SkyWatch Towers	64
Table 4: Information to be Included with Calls for Service	73
Table 5: Dependent Variables and Their Corresponding Types	75
Table 6: Overview of Attribute Codes and Descriptors for Interviewees	81
Table 7: Interview Buffalo (New York) Police Department, August 1, 2019	83
Table 8: Themes and Subthemes Found in the Utilization and Deployment of SkyWatch Towers	88
Table 9: Overview of Data by Jurisdiction	105
Table 10: Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service, Overall & by Crime Type (Data Across Locations from Several States are Combined)	110
Table 11: Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Montgomery, Alabama	115
Table 12: Descriptive Statistics for Crime Around SkyWatch Towers by Individual Deployment Locations in Montgomery, Alabama	119
Table 13: Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Aventura, Florida	125
Table 14: Descriptive Statistics for Crime Around SkyWatch Towers by Individual Deployment Locations in Aventura, Florida	129
Table 15: Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Charlotte-Mecklenburg, North Carolina	132
Table 16: Descriptive Statistics for Crime Around SkyWatch Towers by Individual Deployment Locations in Charlotte-Mecklenburg, North Carolina	136
Table 17: Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Bedford, Texas	140
Table 18: Descriptive Statistics for Crime Around SkyWatch Towers by Individual Deployment Locations in Beford, Texas	144

Table 19: Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Garland, Texas	147
Table 20: Descriptive Statistics for Crime Around SkyWatch Towers by Individual Deployment Locations in Garland, Texas	151
Table 21: Quantitative Hypotheses, Testing Method, and Conclusions	159

List of Figures

Figure 1: Ocean City Sherriff's Department SkyWatch Tower	2
Figure 2: Exploratory Sequential Mixed Methods	55
Figure 3: One Group Pretest-Posttest	68
Figure 4: Calls for Service, Site #1 Montgomery, Alabama	122
Figure 5: Calls for Service, Site #2 Montgomery, Alabama	122
Figure 6: Calls for Service, Site #3 Montgomery, Alabama	123
Figure 7: Calls for Service, Site #4 Montgomery, Alabama	123
Figure 8: Calls for Service, Site #5 Montgomery, Alabama	124
Figure 9: Calls for Service, Site #6 Montgomery, Alabama	124
Figure 10: Calls for Service, Site #1 Aventura, Florida	130
Figure 11: Calls for Service, Site #2 Aventura, Florida	131
Figure 12: Calls for Service, Site #3 Aventura, Florida	131
Figure 13: Calls for Service, Site #1 Charlotte-Mecklenburg, North Carolina	137
Figure 14: Calls for Service, Site #2 Charlotte-Mecklenburg, North Carolina	138
Figure 15: Calls for Service, Site #3 Charlotte-Mecklenburg, North Carolina	138
Figure 16: Calls for Service, Site #4 Charlotte-Mecklenburg, North Carolina	139
Figure 17: Calls for Service, Site #1 Bedford, Texas	145
Figure 18: Calls for Service, Site #2 Bedford, Texas	146
Figure 19: Calls for Service, Site #3 Bedford, Texas	146
Figure 20: Calls for Service, Site #1 Garland, Texas	154
Figure 21: Calls for Service, Site #2 Garland, Texas	154
Figure 22: Calls for Service, Site #3 Garland, Texas	155
Figure 23: Calls for Service, Site #5 Garland, Texas	155
Figure 24: Calls for Service, Site #6 Garland, Texas	156
Figure 25: Calls for Service, Site #7 Garland, Texas	156

CHAPTER ONE: INTRODUCTION

Contemporary disciplinary practices are increasingly technology-based, methodical, and automatic (Staples, 2014). Staples further offers how such practices operate in our everyday lives, bringing not just the “official” deviant, but wide-ranging populations under scrutiny, with techniques that target and treat the body as an object that can be watched, evaluated, and manipulated. Disciplinary practices, under the guise of deterrence, have become an all-encompassing form of control and power. Political investment in surveillance of our bodies ensures our lives are “shaped, manipulated, and controlled by public and private organizations and by people who have authority over us” (Staples, 2014, p. 201). In the contemporary culture of surveillance, personal privacy and trust recedes, while all behaviors become subject to evaluation for potential punishment.

The notion of surveillance as a means of modifying the behavior of individuals has been around for decades and can be traced to Foucault’s (1975/1977) discussion of the formation of docile bodies. According to Foucault, a docile body is one which can be used, transformed, and improved to create order and discipline of the confused, useless, and dangerous. Through re-training deterrence is achieved by a form of corrective punishment. Part of this “training” was found in the architecture of the building itself; the “panopticon,” as suggested by Bentham (1791/2009). This study focuses on a modern-day transportable panoptic structure, the SkyWatch mobile surveillance tower.

SkyWatch, manufactured by Teledyne FLIR Systems Incorporated, is a 27-foot, portable, mobile surveillance platform that can be deployed by a single officer in minutes (FLIR, n.d.). Figure 1 depicts a photograph of a SkyWatch tower taken by the author at a law enforcement community event in Ocean City, New Jersey.

Figure 1

Ocean City Sherriff's Department SkyWatch tower



With a command area that offers a single officer 360-degree viewing capability, large geographic areas can be monitored for potential criminal behavior that would typically take three or more officers patrolling on the ground (FLIR, n.d.). The first tower was purchased in 1996 by the Atlanta Police Department for deployment at the Summer Olympics and was developed to assist with the monitoring of high-crime areas (Tash, 2021). There are over 200 police departments in the United States that have adopted SkyWatch towers (Tash, 2021). The manufacturers of SkyWatch suggest that it can be used to address crime by acting as a deterrent for parking lot thefts and drug trafficking, as well as for suspect identification and evidence-gathering (FLIR, n.d.).

A Discussion of Panopticism

Closed-circuit television cameras, drones, license plate readers, facial recognition programs, and even police body-worn cameras are all examples of the continual development of government sanctioned surveillance technology. These surveilling techniques in public space creates images of a society that has every move of its members being watched and recorded. This Orwellian view of “Big Brother” appears to be becoming more of a reality than fiction in today’s world (Andrejevic, 2004; Boyd & Ellison, 2007; Kandias et al., 2017; Mann et al., 2003; Zuboff, 2015). Stanley and Steinhardt (2003) of the American Civil Liberties Union noted the following regarding the United States becoming a “surveillance society”:

The explosion of computers, cameras, sensors, wireless communication, GPS, biometrics, and other technologies in just the last 10 years is feeding a surveillance monster that is growing silently in our midst. Scarcely a month goes by in which we don’t read about some new high-tech way to invade people’s privacy, from face recognition to implantable microchips, data-mining, DNA chips, and even “brain wave fingerprinting.” The fact is,

there are no longer any *technical* barriers to the Big Brother regime portrayed by George Orwell. (p. 1)

What has transpired since the writing of Orwell's warning tale of mass surveillance and disciplined uniformity of behavior decades ago, is the advent of technology that has brought the pages of a dystopian society to life. Man's need to control and create a society of docile and obedient members is not new. In fact, de Romilly and Ferguson (1980) note in ancient Greece, during the 5th and 6th centuries B.C., the development of laws to not only punish misbehavior, but also to create docility of all civilians. With the evolution of civilization, surveillance has become a method of discipline, an example being Bentham's panopticon, which has led to the entrenchment of a panoptic society.

Panopticism, in its present-day form, has evolved from Bentham's architectural structure to a latent method of surveillance of individuals. Social media, networks, and the World Wide Web have led to information being uploaded into databases for easy access and retrieval (Mitrou et al., 2014). The open exchange of information and opinions engenders an omnioptic society where "the many watch the many" (Jurgenson, 2010, p. 377), at the very least, and has the potential to create a virtual world of "participatory Panopticism" (Whitaker, 2000, p. 139). Even location-based services for tracking, once a distant futuristic concept, have become a domestic panoptic reality (Boesen et al., 2010). Location-based services, a voyeuristic technology as noted by Boesen and colleagues (2010), has become an increasingly ubiquitous method to cast an unseen gaze on interpersonal matters such as concerns of marital infidelity or parental mistrust of their children (Ghosh et al., 2018; de Souza e Silva, 2013; Ur et al., 2014). Additionally, Intelligent Vehicle Highway Systems, information systems that record individuals' destinations, routes, and times of travel, are becoming part of the "informational panopticon" (Reiman, 1995,

p. 34). Not only has the straightforward act of driving become a journey that leaves a documentable trail (Reiman, 1995), but how exactly drivers operate their vehicles is being shaped and modified. Vehicle Safety Communication applications, compiling safe-driving information of vehicle operators, can become a source for insurance companies to determine rates for those they insure (Zimmer, 2009). Even academic rewards systems, particularly that of tenure, have been likened to a panoptic experience whereupon faculty members are forced to moderate their behaviors while under constant observation with an undefined set of incentives and constraints (O'Meara, 2011).

Of course, one must consider that the use of the panoptic model, as a lens through which to analyze surveillance, has become overextended leaving many qualities and processes of surveillance neglected (Haggerty, 2006). Haggerty contends that statements, postulating panoptic strategies as a mode of disciplinary power over a vast group of populations, profoundly overstates the use of the panopticon in the study of surveillance. Successor models, in the means of understanding surveillance, have been championed by Bogard's (2006) "hypercontrol," Lyon's (2003) "social sorting," and Haggerty and Ericson's (2000) "assemblage". However, it has also been argued that the use of a panoptic perspective, with a more nuanced approach in light of the contemporary mobile surveillance technologies, is both appropriate and valid (De Saulles & Horner, 2011). De Saulles and Horner (2011) posit that with the advancement of electronics, such as cellphones, behavior modification does not have to occur from a fixed, centralized form of surveillance.

Purpose of this Study

For hundreds of years law enforcement officials have been struggling to develop effective methods for deterring crime. The advancement of technology has assisted in many new crime prevention techniques, particularly those with panoptic attributes such as closed-circuit television systems and drones. Utilizing panopticism as a deterrent mechanism was reflected extensively in Foucault's (1975/1977) writings. Foucault (1975/1977) wrote of discipline by training in that "the success of disciplinary power derives no doubt from the use of simple instruments; hierarchical observation, normalizing judgement and their combination in a procedure that is specific to it, the examination" (p. 170). The purpose of this study is a two-step examination of one of law enforcement's newest techniques to moderate human behavior.

Incidents that have occurred throughout our nation, including the 9/11 attack on the Twin Towers, the Boston Marathon bombing, and the El Paso Walmart shooting, have left law enforcement agencies struggling to keep abreast of rapidly developing security concerns and ways to enact appropriate measures to ensure safety (Boyle & Haggerty, 2009). Events such as parades, rock concerts, football games, and other situations that involve a large crowd of people raise significant challenges to public safety (Batty et al., 2003). SkyWatch is a standalone piece of equipment that can be rapidly deployed, and strategically placed to provide an all-seeing gaze of the surrounding area (FLIR, n.d.). Utilization of a SkyWatch tower combines the tenets of deterrence theory and routine activities theory with a panoptic gaze in a new disciplinary technique.

Although marketed as a technology that deters crime, SkyWatch's potential deterrent effect has never been empirically evaluated. In fact, as stated by Avilez and colleagues (2014), while New York City Police Department has implemented the use of several towers, and

maintains they are cost effective, there has been no empirical research to assess that assertion. Furthermore, while the New York City Police Department report decreasing crime rates, and satisfied community members, with the utilization of SkyWatch tower they have yet to produce any statistical or qualitative evidence to support this claim (Singleton, 2012). With towers costing from \$136,000 (Schemer, 2012) to \$220,000 (Layne, 2021) not only do they carry financial implications for jurisdictions, but also security and privacy considerations. It is imperative to understand law enforcement personnel's own perceptions that SkyWatch towers are an effective crime prevention strategy as well as statistically assessing the empirical validity of these beliefs.

This study sought to do this by employing a sequential triangulation mixed method procedure (Morse, 1991). Within the qualitative portion the aim was to explore SkyWatch as a panoptic deterrent apparatus through interviews with key stakeholders. Specifically, semi-structured interviews of 20 personnel in multiple law enforcement agencies, as well as one with the manufacturer of SkyWatch itself, were conducted to gather information about SkyWatch towers and the key aspects of deploying them within jurisdictions.

Through the quantitative component the anecdotal perceptions of the towers' deterrent effect, compiled during the qualitative interview process, were statistically analyzed based on law enforcement agencies' calls for service in the areas of deployment. The researcher requested these calls for service under the Freedom of Information Act from law enforcement agencies that had previously participated in the qualitative component of the study, as well as other departments that utilize SkyWatch towers. Datasets from five law enforcement agencies, specifically Montgomery, Alabama, Charlotte-Mecklenburg, North Carolina, Bedford, Texas,

Garland, Texas, and Aventura, Florida, were collected. As these departments were spread throughout the United States an ample diversity of the data was achieved.

With no empirical research having been conducted on these surveillance towers there was no prior literature to guide the theoretical application for the current study. As such, the author took a broad approach utilizing deterrence theory and routine activities theory to fully understand law enforcement's utilization of SkyWatch as a modern panoptic deterrent apparatus. Due to the lack of prior research pertaining to SkyWatch surveillance towers, similar surveillance technology utilized by law enforcement as a method of deterrence, specifically other forms of panoptic policing such as closed-caption television cameras, were explored. It is critical to assess SkyWatch towers as a viable crime prevention strategy not only from a policy and procedure perspective, but also for their impact on communities where they are deployed.

As this is a mixed methods analysis the following research aims guided this study. For the qualitative component there were three overarching objectives. They were as follows:

- To garner an understanding of law enforcement personnel's own perceptions of the theoretical logistics behind the utilization of SkyWatch towers
- To learn of law enforcement personnel's own experiences relating to the operation and deployment of the towers
- To ascertain law enforcement agents' perspectives of the effectiveness of SkyWatch towers deployment as a foundation for the quantitative exploration

In the quantitative section the research question presented was whether statistical analysis can demonstrate SkyWatch surveillance towers are indeed an effective crime prevention strategy. Through the interviews conducted during the qualitative stage a SkyWatch tower was noted by many to be effective at preventing crime if fewer calls for service were received around a tower's

deployment location. This emerging definition was applied and utilized during the quantitative analysis. As seen with closed-circuit television camera systems, which appear to be implemented under the same theoretical principles as SkyWatch towers, there needs to be a process by which the towers, as deterrent mechanisms, are evaluated. In answering this question evidenced-based recommendations for procedures and policies for tower utilization and deployment can be developed.

In integrating both qualitative and quantitative analysis a thorough and complete image of SkyWatch towers can be garnered. In utilizing both methods of analysis the towers' panoptic usage and effectiveness are more fully depicted. The combination of research questions presented allowed for a fuller understanding of this new surveillance technology. Utilization of a mixed methods design provided the researcher with the ability to gain a more in-depth understanding of the research questions posed (Wilkes et al., 2012). Additionally, as a single method procedure may have precluded analysis of some topics that require a different form of analysis or may have limited the insights that could be obtained (Creswell & Plano Clark, 2017), the mixed methods approach was determined to be most appropriate for this study.

CHAPTER TWO: CRIMINOLOGICAL THEORIES AND SKYWATCH TOWERS

With no past literature specifically examining SkyWatch towers prior research on the most similar panoptic technology, closed-circuit television (CCTV), was analyzed. Theoretical underpinnings often noted in empirical studies focused on the utilization of CCTV were routine activities theory (Hollis, 2019; Armitage, 2002) and deterrence theory (Piza et al., 2014; Park et al., 2016). Based on the application of these two theories in analyzing the effectiveness of CCTV as a crime prevention tool each theory was selected as a lens to assess and analyze the utilization and deployment of SkyWatch towers. Utilizing multiple theoretical underpinnings is important as it allows for the production of new perspectives and a more in-depth understanding of the research question (Cairney, 2013).

Furthermore, as SkyWatch towers are indeed one of the newest forms of government-sanctioned surveillance technologies, a presentation of the evolution of surveillance theories is also appropriate. The origins of panopticism, from the works of Bentham and Foucault, are presented along with other modern-day theories of surveillance. These contemporary evolutions from a panoptic perspective include, but are not limited to the synopticon (Mathiesen, 1997), omnipticon (Kandias et al., 2017), BANopticon (Bigo, 2006), panopticommodity (Lyon, 2006) and oligopticon (Latour, 2012). Additionally, those of a post-panoptic perspective, where the dismantlement of the Panopticon (Haggerty, 2006; Haggerty & Ericson, 2000) is urged, are discussed. From each of the theories presented in this section a more nuanced understanding of the underlying principles behind SkyWatch towers utilization and deployment can be ascertained.

Deterrence Theory

Beccaria (1764/1986) noted that halting crime before it occurs would be ideal, however, as this is not possible attempts to deter crime must suffice. Modern-day deterrence theory is clearly grounded in Beccaria's principles of crime and punishment. According to Beccaria for crime to be deterred there must be certainty, celerity, and severity. The following description will provide a brief discussion of the main tenets of deterrence theory.

The first component that is necessary to deter crime according to Beccaria (1764/1986) is certainty. First offenders must appreciate a certainty that they will be apprehended for the criminal offense committed. There is no greater hindrance to deterring crime than offenders going unpunished for their illegal actions. Secondly, Beccaria (1764/1986) argued that for the deterrence of crime to be accomplished there must be celerity to the apprehension and the corresponding consequences. The more time that elapses between an arrest and imposition of punishment for the criminal behavior the less the offender associates the two being related. Lastly, it is posited by Beccaria (1764/1986) that a punishment, proportional to the harm inflicted on society by the crime, is necessary for effective deterrence. Beccaria stated that the goal of the law was not to inflict severe or cruel punishment, but instead to prevent individuals from engaging in crime. Accordingly, a punishment was not to be excessive, but rather just negative enough to outweigh any possible benefits obtained from the offense itself. Beccaria argued that any act of authority between one man and another must be from utmost necessity or else it would be tyrannical.

General and Specific Deterrence

Meier and Johnson (1977) expanded deterrence theory with their introduction of general and specific deterrence. General deterrence is argued to occur when potential offenders are

dissuaded from committing a crime because of perceptions obtained from the punishment of others. An example of this would be a juvenile who does not steal goods from a convenience store as he/she/they are aware his/her/their uncle is currently incarcerated for larceny offenses. Specific deterrence on the other hand occurs when an individual has direct experience with punishment for an offense and ceases continued offending to avoid new punishments. An example of specific deterrence would be an individual arrested for selling illicit drugs. The individual may not sell drugs again as he/she/they do not want to return to prison.

Paternoster and Bachman (2001) discuss these two forms of deterrence further. They suggest that general deterrence occurs when an individual who is contemplating the commission of a crime chooses not to pursue the offense due to the fear of legal punishment. Specific deterrence is when an individual, already being or having been punished for a crime, refrains from further criminal acts in fear of additional punishment. Legal sanctions are often evaluated to determine if they have any effect on deterrence such as parking violations (Chambliss, 1966), speeding violations (Campbell & Ross, 1968), violations of income tax laws (Schwartz & Orleans, 1967), and even the death penalty (Fagan et al., 2006; Grogger, 1990). However, as Williams and Hawkins (1986) note, this leads to an over-narrow definition of the deterrence process if the deterrent effect is solely based on the fear of legal punishment. It may be the criminal does not see legal sanctions as outweighing criminal benefits. Alternatively, informal sanctions such as social disapproval and moral commitment may also serve as a deterrent function (Paternoster, 1987). Certainly, Nagin (2013) observes that perceived informal sanctions imposed by family, friends, the community, and even economic costs due to job loss are negative factors weighed by the offender. Clearly when formulating policy to address crime reduction one must adjust their view of deterrence from a perspective of negative legal consequences versus

criminal profits. Those punishments can pale in comparison to other aspects being weighed in a decision to offend or not.

The separation of deterrence into general and specific, under the conventional view mentioned above, has drawn criticism for its unstable logic and inability to explain the actual deterrence process. Stafford and Warr (1993) propose a reconceptualization of deterrence under a single theory. Here instead of distinguishing between either the general public or specific offenders the focus is to be limited to contrasting the kinds of experience with legal punishment. According to Stafford and Warr general deterrence is the deterrent effect of indirect experience with punishment and punishment avoidance, while specific deterrence is the deterrent effect of direct experience with punishment and punishment avoidance. Here deterrence, as noted by Gibbs (1975) is the omission or curtailment of a criminal act out of fear of legal punishment.

Paternoster and Piquero (1995) offered their own take on reconceptualizing deterrence. According to them general deterrence was the result of a person's vicarious experiences, while specific deterrence was achieved through a person's own experiences. Reconceptualized deterrence in either its original form posited by Stafford and Warr (1993) or that of Paternoster and Piquero (1995) offers the benefit of recognition in that both general and specific deterrence can occur for any individual or any population, as well treating punishment avoidance differently from the experience of suffering punishment.

Absolute and Marginal Deterrence

Two other aspects of deterrence are absolute and marginal deterrence as introduced by Nagin (2013). Absolute deterrence focuses on whether the sanctioning of certain acts actually prevents the occurrence of them. An example of this can be seen in the criminalization of the possession of illicit drugs and whether corresponding punishments prevent its occurrence. In

marginal deterrence crime is incrementally reduced as a result of increased certainty, celerity, or severity that occurs in excess of that which is achieved by current sanctions. An example of marginal deterrence would be if there was a decrease of drug possession offenses with the use of mandatory incarceration as opposed to probation.

Fader (2016) found that absolute deterrence only led to one of 20 career drug sellers to desist from crime. On the other hand, Watson and colleagues (2015) note increased speeding penalties did act as an absolute deterrent as fewer drivers re-offended after being sanctioned. However, the opposite effect was found for marginal deterrence as drivers that did re-offend, despite the increased penalties for speeding, at the same frequency and with no difference in length of time between the offenses (Watson et al., 2015).

Perceptual Deterrence

Geerken and Gove (1975) posit that there are two types of deterrence mechanisms with a clear distinction between the two. In one type, deterrence operates through formal sanctions which are communicated by official agents such as police and the courts. The other type of deterrence operates through an informal system where threats are communicated by others, such as community members, interpersonally. Geerken and Gove suggest that in both systems crime would be indirectly affected through the perception of sanctioned threats.

Pogarsky and Piquero (2003) examine how perceptions of offenders, relating to the threat of sanctions, is altered as a result of committing the actual offense and the corresponding outcomes. Their findings suggest an individual's perceptions of punishment are in fact continually shifting in response to these outcomes that are obtained. Pogarsky and Piquero's results were supported by the work of Matseuda and colleagues (2006) as well as in longitudinal research (Pogarsky et al., 2004). Lastly, Fagan and Piquero (2007) found that risk and reward

perceptions were incorporated into an offender's development of law-related beliefs that then mold ensuing perceptions of risk and consequently decisions about offending.

Deterrence Decay

Sherman (1990) notes that there can be an overestimation of the certainty of apprehension that potential offenders learn through their experiences which may lead to a reduced deterrent response. This deterrence decay occurs as would-be offenders realize they have been fooled and have over-estimated the increased risk of sanctions imposed by an intervention. Ross (1984) demonstrated this deterrence decay in his study of the implementation of measures to increase the certainty of apprehension in drunk driving. To overcome the issue of decay the objective chances of apprehension need to be raised beyond a point not regarded to be negligible as beneath this level eventually the possibility of getting caught is viewed as minimal (Ross, 1984).

Several other studies have reported findings that support deterrence decay as put forth by Sherman (1990). For instance, Sherman and Rogan (1995) report a decrease in calls for service after several raids on crack houses, but that within two weeks these effects decayed. Additionally, Sorg and colleagues (2012) demonstrate foot patrol crackdowns of hot spot areas were less effective when the intervention was extended over a longer period. Specifically, in the areas where an increased patrol presence occurred for an additional 10 weeks, deterrence decay was documented. This decay however was not recorded in the other beats which had received the shorter amount of intensified patrol. Lastly, Novak and colleagues (2016) highlight the effectiveness of violent micro-places receiving increased patrol presence, however this impact quickly dissipated once the intervention was removed.

Critiques and Limitations of Deterrence Theory

It must be recognized that deterrence theory has both its critics, as well as its own limitations. There are three main criticisms leveled at deterrence theory and they involve the rational actor component, the impossibility of proving a deterrent effect of punishment, and a lack of firm moral foundation (Kennedy, 1983). First, regarding the rational offender aspect. The assumption made is that all individuals carefully weigh the benefits and consequences of their actions before they do them. Arguably as some criminal acts are spontaneous acts of emotion this potentially voids a key component of deterrence theory (Kennedy, 1983; Pathinayake, 2018; Tversky & Kahneman, 1974). Secondly, while society members repeatedly cite deterrence to condone the punishment of individuals the overburdened criminal justice system appears to indicate an opposite lack of effect (Kennedy, 1983; Pathinayake, 2019). In fact, Pathinayake (2018) argues that for criminal acts to be deterred implementation of policies focused on certainty and celerity are essential with only moderate levels of punishment necessary. Lastly, while proponents of deterrence theory seek to show a particular sanction positively impacts crime rates, other moral aspects such as social condemnation and its own inhibitory function are often ignored (Kennedy, 1983).

Aside from the criticisms presented previously deterrence theory also has several limitations that must be noted. Tonry (2008) posits that current research attempting to model deterrent effects will continue to fall short. He argues that:

Such research is incapable of taking into account whether and to what extent purported policy changes are implemented, whether and to what extent their adoption or implementation is perceived by would-be offenders, and whether and to what extent offenders are susceptible to influence by perceived changes in legal threats. (p. 280)

Furthermore, the argument is put forth that deterrence theory as it is applied currently does not account for the variation in individual's susceptibility to the implementation of new legal sanctions (Tonry, 2008). Including individuals that are unlikely to ever commit a criminal offense is a defect in contemporary deterrence studies (Wikström, 2007). Furthermore, Tonry (2008) suggests a need for insight into why changes in punishment have no or little effect on crime rates, and for researchers to stop solely focusing on whether a deterrent effect is present or not.

Deterrence Theory and SkyWatch Towers

Two of Beccaria's (1764/1986) three principles of deterrence, certainty and celerity, are applicable for the utilization and deployment of SkyWatch towers. First, when a tower is deployed it demonstrates a law enforcement presence. To the extent an offender may recognize this is unknown, however a tower standing 27-feet in the air, with law enforcement signage encasing it, can be seen to present some level of police presence. When a tower is deployed a certainty of apprehension may exist to the offender in that he/she/they could have their criminal acts observed and lead to them being apprehended.

In addition to the SkyWatch tower providing a level of certainty Beccaria's (1764/1986) principle of celerity is also evident. By having an officer either present in the tower, or an observer in a command center watching the remote camera footage from the tower, officers can be quickly dispatched to an incident. This swiftness of apprehension after a criminal act has been committed is an essential component of deterrence theory and assists in demonstrating a SkyWatch tower as a deterrent apparatus.

Routine Activities Theory

An explanation for criminal behavior and offending is attempted to be answered by many theories. These theories include, but are not limited to, Hirschi's social control theory, Merton's strain theory, Gottfredson and Hirschi's self-control theory, and Cornish and Clarke's rational choice perspective. Among this plethora of scholarly contributions exists an often narrowly applied approach that has more versatility than it is given credit for. The routine activities theory, developed by Cohen and Felson in 1979, has evolved from a simple theory with limited application to a broad ranging tool that can be utilized to address and analyze a multitude of criminal acts (Felson, 2001).

When the routine activities approach was first published it strictly applied to direct-contact predatory offenses where an individual stole property from a person or injured another (Felson, 2001). Examples of a direct-contact criminal acts could be evidenced by a thief ripping a purse off a woman's shoulder as she walks down a sidewalk or a man grabbing a woman from a jogging path in a park and sexually assaulting her. Cohen and Felson further elaborated that these direct-contact criminal offenses had to occur in the same geographic location, at the same time, and must include three critical elements (Felson, 2001). These three elements were a likely offender, a suitable crime target, and the absence of a capable guardian against the crime (Felson, 2001). Felson (2001) notes, "the hallmark of the theory is its de-emphasis upon the offender and shift of attention towards the target and guardian" (p. 43). Regardless of its focus on the target and guardian factors, for a full comprehension of the routine activities approach a detailed explanation for each component is essential.

An offender is considered anyone who is likely to commit a crime. Gottfredson and Hirschi (1990) describe a typical offender as a young male with poor or underdeveloped social

control skills. Felson and Eckert (2016) further explain that while an offender normally begins a criminal career at an early age, other offenders do not start down the path of criminality until later in life. In either fashion “the march of life provides new criminal opportunities, hence changing the pool of likely offenders as time goes on” (Felson & Eckert, 2016, p. 31). While the general profile of the offender may change, his/her/their underlying propensity to commit crime does not.

A target is defined as any person or property that an offender would like to possess or control. A target could be an unlocked car or an elderly person walking down the street with a large purse over a shoulder. A suitable guardian can be a police officer, a store clerk, a passerby on the street, or even noticeable automatic surveillance such as closed-circuit television cameras. The guardian acts as a deterrent to the offender. “A guardian is not usually someone who brandishes a gun...but rather someone whose mere presence serves as a gentle reminder that someone is looking” (Felson & Eckert, 2016, p. 31).

These later two components of routine activities theory, the target and the capable guardian, are directly related to deterrence theory’s principle of certainty. The probability of apprehension may be lowered if the target is vulnerable, and thus not able to thwart the crime, or lacking guardianship. Clarke (1997) notes these opportunity-based situations can be coupled with deterrence to alter areas that generate criminal behavior. With an increased presence of some form of guardianship, or hardening of potential targets, the certainty of apprehension, and thus the certainty of punishment, can be increased thereby introducing a deterrent effect (Painter & Farrington, 2001; Wilcox et al., 2007).

The routine activities theory presented a different approach in evaluating criminal acts and their occurrence. First, routine activities theory redirects attention towards the opportunities

to commit the criminal acts rather than the actual motivations of the offender and secondly, instilled a greater picture of crime opportunities in society rather than just focusing on the criminal justice system (Felson, 2001). These adjustments offer a unique approach to crime analysis and prevention by identifying settings as a critical factor in the occurrence of crime. Eck's crime triangle combines the three components of each crime occurrence, the offender, the target, and the place with not only a guardian, but also a handler and a place manager (Felson & Eckert, 2016). Under Eck's model a handler is one who supervises potential offenders such as a parent, coach, or teacher (Felson & Eckert, 2016). A place manager is one who supervises a place thereby dissuading crime merely with his/her/their presence (Felson & Eckert, 2016). Crime occurs when an offender can evade a handler and then find a place without a manager, so he/she/they can target an individual or property without a guardian (Felson & Eckert, 2016). An example of such a situation would be when two college students, low on cash, leave their dormitory and go to a bar where they proceed to take a purse hanging off a bar chair. First the students escaped from their handler, the dormitory residential advisor. They then found a bar with a manager, the sole bartender, overloaded with customers, and therefore virtually absent. Lastly, as not only the woman whose purse they stole was focused on a World Series game, so too were the rest of the patrons in the establishment. With all potential guardians pre-occupied, and especially with the ease of accessibility of the purse on the back of the chair, the situation was ideal for a crime to occur.

The validity of the routine activities approach and its versatility have been showcased in numerous empirical studies. These studies include, but are not limited to, the application of routine activities theory to evaluations of victimization at work (Lynch, 1987), stalking victimization for males and females (Reyns et al., 2016), adolescent online victimization

between genders (Marcum et al., 2010), cybercrime victimization (Holt & Bossler, 2008), larceny theft victimization (Mustaine & Tewksbury, 1998), household burglary and larceny (Thompson & Fisher, 1996), sexual assault of college women (Mustaine & Tewksbury, 2002), and the sexual assault of men (Tewksbury & Mustaine, 2001).

Critiques and Limitations of Routine Activities Theory

While Cohen and Felson's routine activities approach has been applied to a wide variety of criminal offenses in an attempt to demonstrate how these criminal events occur, as well as being one of the most favored approaches in criminology (Schwartz et al., 2001), critiques and limitations exist. The main limitation of the theory is that while it presents an understanding of how crime occurs, which is important, the earliest form of the routine activities approach did not offer any actionable crime prevention strategies. In fact, Felson (2001) noted that his routine activities theory virtually said there was nothing that can be done about crime as it was "built into everyday life" (p. 45). With time, criminologists came to recognize that if opportunities for crime increase then so does crime, but conversely if opportunities for crime decrease, less crime occurs (Felson, 2001). The methods used to reduce these crime opportunities became the basis for Clarke's situational crime prevention perspective (Felson, 2001; Felson & Eckert, 2016).

A major criticism of routine activities theory is that it does not address the motivation of the offender (Schwartz et al., 2001). Even though a critical component of the theory is that for crime to occur there must be an individual willing to commit an offense if opportunity allows, termed a motivated offender by researchers (Schwartz et al. 2001), Felson notes he never used the word motivation in the original theory (Clarke & Felson, 1993). However, little research has been conducted to assess what actually prompts an individual to commit a crime if there is a

suitable target present thereby leaving no clear answer as to what differentiates an offender from others in the same situation (Akers & Sellers, 2013).

Routine Activities Theory and SkyWatch Towers

At the core of routine activities theory is the argument that crime will occur when three essential components combine at the same time and geographic location (Felson, 2001). These elements are a likely offender, a suitable target, and a lack of a capable guardian (Felson, 2001). Within the current study a SkyWatch tower, representing the presence of law enforcement, becomes the capable guardian. At over 27-feet in height the sheer size of a tower precludes it from being unobserved. While it may be possible that a motivated offender and a suitable target, perhaps an unlocked automobile, may be present in a parking lot, having a clearly emblazoned law enforcement apparatus deployed could be the guardianship needed to deter criminal activity from occurring.

Surveillance Theories

As presented in current literature the evolution of surveillance theory has occurred chronologically in three stages (Galič et al., 2017; Timan et al., 2017). The first is noted to be focused on the Panopticon and panopticism, while the second phase shifts attention from Bentham's architectural designs and Foucault's work on the creation of docile bodies to one of post-panoptical theories of surveillance (Galič et al., 2017; Timan et al., 2017). In the most contemporary form surveillance theory has not been re-birthed in new or different theoretical frameworks, but rather has become a refined version, with some additions, of those theories conceptualized previously (Timan et al., 2017). The following discussion will cover an overview of the structure underlying surveillance theory, as well as highlighting several of the new directions surveillance concepts have taken in the form of new Panopticons.

Panopticon

To create order and discipline of individuals that are addled, purposeless, and dangerous a docile body, one that can be used and transformed, is to be fashioned (Foucault, 1975/1977). Foucault (1975/1977) writes that through a corrective form of punishment, namely re-training, deterrence was to be achieved. The architecture of the building itself the “panopticon” as suggested by Bentham (1791/2009), was to assist in this “training”. The prison became an apparatus of disciplinary perfection that made, with a single gaze, it possible to see everything constantly (Foucault, 1975/1977). In this manner the deterrent elements of certainty and celerity were exemplified as all offenses were observed and addressed with immediate action (Foucault, 1975/1977). With an omni-present technique the conforming of the criminal’s behavior was to be achieved. Foucault writes, “it is possible to intervene at any moment and because the constant pressure acts even before the offenses, mistakes or crimes have been committed” (1975/1977, p. 206). The conforming of prisoners to docile bodies, by the ever-present gaze of authorities showcased how discipline could fix or correct those of a criminal nature.

Foucault’s (1975/1977) study of deterrence and discipline focused on shaping conformity with the powers of observation. Even though Foucault was examining institutions built to achieve deterrence through the lens of panopticism from decades ago, the underlying principle is ever-present today. Staples (2014) writes of discipline in the form of modern cultural surveillance. These methods of surveillance range from benign or “soft” forms that are unobtrusive to “hard” or rather invasive practices (Staples, 2014, p. 2). According to Staples soft forms are those that are relatively unobtrusive and unnoticeable. Security system video cameras and computerized checkouts are examples of this benign form of surveillance. To the opposite extreme are what Staples (2014) terms “surveillance ceremonies” (p. 2). These invasive methods

“are often designed to uncover the truth about someone’s behavior....to make them consciously aware that they are indeed being watched and monitored” (pp. 2-3). Instances of these hard forms of surveillance can be seen in random drug testing, utilization of lie detectors, pre-employment ethical examinations, and the use of body scanners (Staples, 2014).

Staples (2014) suggests that these techniques and technologies are exercised on people, both within and outside the legal system, with the purpose of watching our bodies and regulating our activities to ultimately shape our behavior. Foucault (1975/1977) argues that the power and control modeled in the Panopticon reached beyond the walls of prison to be applied to other institutions such as factories, the military, schools, and the wider social body where people do not know whether someone is watching them or not. Here Foucault’s “panopticism” is again coupled with Beccaria’s “deterrence” in a contemporary format to ensure behavioral conformity in criminal, as well as non-criminal, members of society.

SkyWatch Towers and Their All-Seeing Gaze

As Foucault (1975/1977) writes a docile body is one which can be transformed and improved to create order and discipline. With the introduction of Bentham’s Panopticon, the prison became an apparatus of disciplinary perfection that made, with a single gaze, it possible to see everything constantly. This formation of docile bodies can be seen in the use of SkyWatch towers today. The towers act as modern day, transportable panopticons that create uncertainty as to whether a law enforcement officer is inside conducting surveillance. Subjecting everyday citizens to this ever-present gaze of authorities creates an unspoken pressure for them to modify their behavior and in turn shapes a society of docility.

Post-Panopticon

With the advent of computers, and continuing through to relatively recent technological developments, such as the networking of household appliances, a second phase of surveillance theory began emerging in the late 1970s (Timan et al., 2017). During this stage authors have attempted to establish varying theoretical frameworks that move away from the panoptic perspective as a means of conceptualizing modern-day surveillance through a different lens. While there are numerous writers that have advocated for the creation of a new model of surveillance theory a few of the most influential, such as Deleuze (1992) with his control societies, Haggerty and Ericson (2000) with their surveillant assemblage, and Zuboff (2016) with his surveillance capitalism, will be presented in the following paragraphs.

Deleuze, known as the “founding father of post-panoptical literature” (Galič et al., 2017, p. 20), as well as Guattari, recognize a shift in surveillance methods from a society based on institutional discipline to those societies structured on control (Deleuze, 1992; Deleuze & Guattari, 1980/1987). Deleuze (1992) argues that what were once institutions, such as hospitals, schools, and factories, have been morphed into corporations where the short-term aims are to garner profits from capitalism and globalization. According to Deleuze, a society composed of docile bodies achieved through extended discipline is no longer possible. Instead, he proffers a society where constant control of the public and their purchasing behavior is essential to properly mold consumers to ensure market domination of business conglomerates. Whereas Foucault (1975/1977) focuses on prisons, hospitals, or other enclosed institutions in the creation of society steeped in docility, Deleuze calls attention the notion of control from a distance through the utilization of technology to “reform bodies (and minds) through daily regimes instigated by those in power” (Galič et al., 2017, p. 20).

While Deleuze does not outright criticize Foucault's (1975/1977) use of the Panopticon as a trope for surveillance in our contemporary society others have blatantly called for it to be demolished (Haggerty, 2006; Haggerty & Ericson, 2000). In the place of a panoptical lens Haggerty and Ericson (2000) have put together what they have termed the "surveillant assemblage" (p. 606). The concept of assemblage as expressed by Deleuze and Parnet (1977/1987), and later succinctly summarized by Patton (1994), is a "multiplicity of heterogeneous objects, whose unity comes solely from the fact that these items function together, that they "work" together as a functional entity" (p. 158). Haggerty and Ericson (2000), utilize the work of Deleuze and Guattari (1980/1987) to analyze the union of at once separate, but now joined and even virtual, surveillance networks. To this end Haggerty and Ericson (2000) note the following:

knowledge of the population is now manifest in discrete bits of information which break the individual down into flows for purposes of management, profit and entertainment...The coalescence of such practices into the surveillant assemblage marks the progressive 'disappearance of disappearance' – a process whereby it is increasingly difficult for individuals to maintain their anonymity, or to escape the monitoring of social institutions. (p. 619)

With online banking, shopping with a click of a few buttons, and even social media, society members are seemingly more and more willing to hand over their personal information and accept being watched in the guise of simplicity and entertainment. In the wake of these transactions an individual's personal preferences, habits, and even one's way of life are recorded for use by governmental and corporate agencies (Haggerty and Ericson, 2000). Society members are not needing to be coerced, rather they are willingly volunteering to provide corporations with

this window into their lives. In fact, 70 percent of British citizens were pleased to trade personal data if in exchange they received something in return, such as more personalized service or other benefits (Dennis, 1999, as cited in Haggerty and Ericson, 2000).

From Deleuze to Haggerty and Ericson the post-panoptic perspective of surveillance theory has been continually evolving. In one of its more recent evolutions a new strand of theorizing has developed; the (neo-)Marxist approach (Galič et al., 2017). This form of “surveillance capitalism” was formulated by Foster and McChesney (2014, para. 7) and then later expounded upon by Zuboff (2015, 2016). According to Zuboff (2015, 2016) this new form of capitalism is emerging from surveillance and being utilized to transform and predict human behavior to increase revenue and take control of the markets. The use of “big data” is an essential aspect of this new economical paradigm; one where the everyday actions of peoples’ lives are sold to garner profit by influencing and systemically modifying their behavior (Galič et al., 2017, p. 25).

Utilization of big data in criminal justice is becoming more prevalent as organizations in the criminal justice system are pairing with computer and software engineers to produce new methods for managing risk (Hannah-Moffat, 2019). So called “risk logics” have become immersed within the practice and planning of the criminal justice system (Hannah-Moffat, 2019, p. 45). Specifically, actuarial risk analysis, which is psychologically informed, is employed to direct correctional facilities, strengthen security, sentence offenders, and predict and suppress crime (Feeley & Simon, 1992; Hannah-Moffat, 2013; Harcourt, 2005; Kemshall, 2003; O’Malley, 2009). While proliferation of big data’s usage in the criminal justice system may appear advantageous, critics are concerned that this understanding of criminal activity and how it

is acted upon has led, and will continue to lead, to social inequality and the violation of established mandates for criminal procedure (Brayne, 2017; Završnik, 2021).

Contemporary Surveillance Theories

To encompass all facets of surveillance in one over-arching theory has been noted to be a futile cause with the rapidly increasing size and ever-changing complexities of surveillance-based technology (Galič et al., 2017; Timan et al., 2017). Instead, what can be seen within contemporary literature is the emergence of surveillance concepts that build upon and branch out from the original two phases. Three of the most notable modern approaches are “alternative opticons, sousveillance, and participatory surveillance” (Timan et al., 2017, pp. 8-9). Each of them will be given a brief overview below.

Alternative Opticons

As previously noted there have many authors that have found the utilization of the Foucault’s Panopticon as a metaphor for surveillance outdated and inept at addressing the confluence of new modern-day surveillance technology. However, there are still many that not only continue to support the panoptic perspective (Caluya, 2010), but have developed their own opticon-based concepts such as the “omnicon” (Groombridge, 2003); the “ban-opticon” (Bigo, 2006); “global panopticon” (Gill, 1995); “panspectron” (De Landa, 1991); “myoptic panopticon” (Leman-Langois, 2003); “fractal panopticon” (De Angelis, 2001); “industrial panopticon” (Butchart, 1996); “urban panopticon” (Koskela, 2003); “pedagopticon” (Sweeny, 2004); “polyopticon” (Allen, 1994); “synopticon” (Mathiesen, 1997); “panoptic discourse” (Berdayes, 2002); “social panopticism” (Wacquant, 2001); “cybernetic panopticon” (Bousquet, 1988); oligopticon (Latour, 2012), and the “neo-panopticon” (Mann et al., 2003). See Table 1 for a description of these alternative opticons.

Table 1*Descriptions of alternative opticons*

Name of alternative opticon	Description of alternative opticon
Omnicon	Where all watch, or potentially, watch all
Ban-opticon	Profiling and containing foreigners
Global panopticon	Connections between the processes of economic globalization. The way social choices of individuals are being shaped and reconfigured
Panspectron	Non-optical intelligence acquisition machine. It is antenna farms, spy satellites and cable-traffic intercepts that feed into its computers all the information that can be gathered.
Myoptic panopticon	The transformation of policing into a purely reactive activity due to video surveillance and other technologies
Fractal panopticon	A mechanism to extract labor from the entirety of the social field
Industrial panopticon	Industrial strategies for surveillance of workers in health and disease
Urban panopticon	The fusion of material urban space and cyberspace by surveillance
Pedagopticon	A new technology that offers a full 360-degrees of monitoring in the classroom
Synopticon	Television and newspaper tabloids
Panoptic discourse	The application of the panoptic model to managerial discourse to understand the normative order of organizations

Table 1 Continued

Name of alternative opticon	Description of alternative opticon
Social Panopticism	Intensification of both social and penal treatments of poverty and the activation of the policing functions of welfare services
Cybernetic panopticon	Every bit of information about an individual's movements, purchases, communications stored in the so-called cloud
Oligopticon	A system of monitoring that relies on multiple sites of observation. It is seen to command or control situations so long as it is able to establish and maintain a connection to that which is physically traced or monitored
Neo-panopticon	New communication techniques are exploited in public or semi-public locations where individuals are liable to become unwilling and sometimes unknowing subjects of surveillance

Note. Table created from a compilation of the following sources of work (Allen, 1994; Berdayes, 2002; Bigo, 2006; Bousquet, 1988; Butchart, 1996; De Landa, 1991; De Angelis, 2001; Gill, 1995; Groombridge, 2003; Koskela, 2003; Latour, 2012; Leman-Langois, 2003; Mann et al., 2003; Mathiesen, 1997; Sweeny, 2004; Wacquant, 2001).

Even reality shows and YouTube channels have become subject to panoptic analysis. Lyon coined the term “panopticommodity” (2006, p. 6) and Whitaker the “participatory Panopticon” (2000, p. 139), to encapsulate the notion of discipline being exacted in the same form of being watched and watching as Foucault’s panoptic perspective. The model of power that Foucault (1975/1977) writes of comes in the form of panoptic observation that subtly encourages individuals to modify and transform their behavior to that of an acceptable nature. Similarly modern-day events, such as 9/11, have birthed new forms of surveillance. Bigo (2006)

put forth the term, ban-opticon as a means of describing current surveillance systems that are aimed at keeping those individuals out of American society that do not conform to the prescribed rules and regulations. While Haggerty (2006) may advocate that if “Foucault continues to reign supreme in surveillance studies [then] it is perhaps time to cut off the head of the king” (p. 27), his panoptic metaphor appears as strong as the brick-and-mortar edifice it developed from.

Sousveillance

As much of surveillance discussions are often constructed around the paradigm of watchers and those being watched it is of no surprise that an addition to the third phase of the evolution of surveillance theories incorporates a measure of resistance. Mann (2004) and Mann and colleagues (2003) argue that with the advent of new surveillance technologies, such as mobile, personal, and even wearable camera phones, it is possible to invert the process and watch those watching us. The term conceived by Mann and colleagues (2003) to describe this process, whereby authorities are watched from below by citizens, is “sousveillance” (p. 332).

Sousveillance, “from the French words for “sous” (below) and “veiller” to watch, is suggested to be the inverse panopticon where individuals can utilize surveillance technologies of control in a reverse fashion (Mann et al., 2003, p. 332). One of the most well-known examples of sousveillance was the video recording made by a Los Angeles citizen of police officer beating Rodney King after he was stopping him for a traffic infraction (Mann et al., 2003).

As sousveillance is the reversal of the watched now being the watchers the focus of deterrence theory can also be re-adjusted. Instead of the certainty of apprehension, normally held to be the perception of a criminal offender, it can now be applied to those in positions of power such as law enforcement officers. While a police officer may not be necessarily committing a criminal act, as seen in the Rodney King and George Floyd cases, interactions with citizens can

be potentially less than respectful. Having an officer aware that his/her/their behaviors are being monitored, the certainty component of deterrence, may deter negative actions. This can be beneficial as the more citizens feel that police practices are fair the more legitimacy police garner (Jonathan-Zamir et al., 2015).

Participatory Surveillance

The last main concept comprising contemporary surveillance theories is “participatory surveillance” (Albrechtslund, 2008, para. 1). According to Albrechtslund (2008) participatory surveillance occurs when citizens, and those as users of technology, not only take a part in the surveillance process themselves in the form of watchers, but also voluntarily, as well as intentionally, participate in the part of those being observed. As noted by Boyd and Ellison (2008) social networking sites, along with many other online environments, have become the new platform for the art of surveilling to flourish and they are not viewed adversely. In fact, Galič and colleagues (2017) write:

From the perspective of users and visitors of these online places, the high level of surveillance, in the form of tracking and being tracked, watching and being watched, or sharing and being shared, is not necessarily negative... Participating via, for instance, sharing, responding or ‘liking’ engages users into these platforms, where the idea of being seen and ‘followed’ is a precondition rather than a setback. (p. 30)

This type of participatory surveillance can be seen nightly on prime television or streaming devices. Reality shows such as *Big Brother*, with 23 seasons and 820 episodes (IMDb, 2022a), *The Bachelor*, with 26 seasons and 275 episodes (IMDb, 2022b), and *Cops*, with 33 seasons and 1,109 episodes (IMDb, 2022c), keep people glued to screens for hours. The participants of the shows are rewarded in some manner, monetarily or with very large engagement rings at the end,

for displaying their bodies and emotions (Lyons, 2006). This in turn de-stigmatizes close surveillance as those individuals at home watching are actively approving the surveillance as much as those on the screen (Lyons, 2006).

SkyWatch Towers and Surveillance Theories

From Bentham's (1791/2009) Panopticon and Foucault's (1975/1977) docile bodies surveillance theories have evolved and will continue to do so with the rapidly developing surveillant technologies present today. The expansion in panoptic observations techniques can be seen in the SkyWatch towers. From a single position the gaze of law enforcement can be foisted upon society members at large. The modification and shaping of individuals' behavior occurs as with the tinted windows in the tower one is not able to determine whether they are being watched or not. Similar to security video cameras, which are a soft or benign method of surveillance (Staples, 2014) SkyWatch towers may not be considered to be physically invasive, however their massive size alone connotes a powerful police presence.

Summary and Conclusion

While some have suggested that to truly understand current technology-driven surveillance there is a need to go beyond Foucault's panoptic theory of surveillance (Webster and Robins, 1986), and others have made outright criticisms (Bogard, 1996; Haggerty & Ericson, 2000; Haggerty, 2006; Lyon 1993; Mathiesen, 1997) the panopticon is ever-present in surveillance discussions. Furthermore, Lyon (2006) posits that the panopticon will continue to remain a constant in surveillance studies for the very reasons that:

Today the complex dialectics of watching and being watched are still central to regulation and to governance even if – or just because -we acknowledge both in the shift from 'dataveillance' and the growth of many other forms of mediated watching by the

few of the many as well as the many of the few. If not as an actual architecture expressed in stone and cement, the panopticon still functions as an ideal, a metaphor and a set of practices.... [these] practices of unseen observation and categorical discrimination are encountered on a daily basis beneath the CCTV cameras and on the phone to the call centre. (pp. 4-5)

What has become quite evident is that the modern-day surveillance has infiltrated every aspect of our lives. Beyond the prison walls the panoptical influence can be seen in workplaces (Hoobler, 2005), the corporate sector (Gandy, 1993), and even entertainment (Andrejevic, 2004).

As Hoobler (2005) notes that “general society subscribes to the agenda of order, obedience, and control in organizations, [where] workers have become willing participants in the quest for docile bodies” (p. 53). Good behavior has become internalized in the form of conformity and standardization which places one on the track of advancement and financial reward (Hoobler, 2005). Even with reality television shows such as *Big Brother* surveillance is rationalized both by those being watched and the watchers all in the name of profit and spectacle (Andrejevic, 2004). Unfortunately, homogenized, docile bodies do not allow organizations to capitalize on the talents and skills of their employees thereby hindering their success as a company overall (Hoobler, 2005). Furthermore, on an even broader scale, docility can also lead to a paralysis of society if a lack of conflict exists (Christie, 1977).

As relevant to this research as the above focus on surveillance and the training of docile bodies is one’s attention must not wander stray from the previous theoretical underpinnings presented. It is only by incorporating the principles found in deterrence theory and routine activities theory, with those outlined in the panoptic surveillance discussions, that the utilization and deployment of SkyWatch towers can be fully analyzed. Simply stated one must consider that

criminals all make decisions of some type. The decision may be as simple as whether to commit the crime or not to the very complex of multiple decisions such as planning, victim selection, or whether to use a weapon. Deterrence rests on criminals recognizing that they will be apprehended, convicted, and punished. The potential criminal must see these costs as not being optional risks, but rather inevitable outcomes. Only then can it be certain that deterrence will have a much greater likelihood of succeeding as there will be no chance the benefits of crime could be more appealing. Everyday individuals make choices from what car to buy to what job to take. The pros and cons of each are balanced and a decision is made. As humans are self-serving in nature the choice is usually the most optimal option. Criminals are no different and to treat them so would undermine any hope of deterrence.

Lastly, please see Appendix A for an elaborated discussion of an additional applicable theory to SkyWatch tower's utilization and deployment: rational choice theory. As this theory is outside of the scope of this study, it is presented to guide future research on SkyWatch towers and their effectiveness as a crime prevention strategy.

CHAPTER THREE: LITERATURE REVIEW

In 1996, the Atlanta Police Department purchased the first SkyWatch tower for use during the Olympics (Tash, 2021). Now with over 200 law enforcement agencies across the United States owning and operating at least one tower, the dearth of empirical research on these towers of surveillance is mystifying (Tash, 2021). In fact, there has only been one attempt to conduct any form of research on SkyWatch towers. Blackwood and Hayes (n.d.) issued a report for the Loss Prevention Research Council on SkyWatch users' perceptions of the tower as a crime and risk reduction tool. This however was not a peer-reviewed analysis, and in fact, remains relegated to the archival history of the Loss Prevention Research Council's database. Therefore, while the results are insightful the report further substantiates the need for not only more in-depth qualitative explorations, but especially those of a quantitative nature.

In the abbreviated study by Blackwood and Hayes (n.d.) they interviewed twelve law enforcement users of SkyWatch towers. They asked a series of questions focused on system effectiveness. The dependent variables included were type of effectiveness, such as proactive and reactive, specific crimes, effectiveness compared to other crime reduction tools, public perception compared to other crime reductions tools, and effectiveness timing. The specific crimes incorporated were armed robbery, assaults and battery, sexual attacks, murder, auto theft and burglaries, carjackings, as well as violence and unrest. Additionally, other crime reduction strategies were compared to the efficacy of SkyWatch towers including special law enforcement patrols, uniformed private security, visible CCTV cameras, and high intensity lighting.

Blackwood and Hayes (n.d.) hypothesized that SkyWatch towers might improve the perception of safety by visitors and employees that parked in a lot where a tower was present. While community members were not directly interviewed the participating law enforcement

respondents were asked for their opinion on the public's feelings of a SkyWatch tower as a means of crime reduction. The respondents were also asked what citizens' perceptions of safety were relating to other crime reduction methods such as special law enforcement patrols, uniformed private security, visible CCTV cameras, and high intensity lighting. Lastly, the authors sought to examine whether the effectiveness of a SkyWatch tower deployment was recognized immediately, after a week, or after a month.

While it must be recognized that the study sample was small and had a vague methodological explanation, the results are worth noting. First, 100% of the respondents indicated that a SkyWatch tower was either a very effective or effective tool for proactive crime deterrence (Blackwood & Hayes, n.d.). Secondly, this same agreement was seen in a SkyWatch tower being somewhat effective, effective, or highly effective in suppressing auto thefts and burglaries from vehicles. When comparing the deployment of a tower to other crime reduction tools SkyWatch was found to be the highest ranked preventive measure. Special law enforcement patrols and high intensity lighting were placed second and third respectively, while the other strategies did not receive above 42% in their effectiveness. As to the public's perceived perception of safety in relation to SkyWatch towers, as compared to other crime prevention tools, 92% of respondents reported them to be effective, somewhat effective, or highly effective. Visible closed-circuit television cameras had an 83% community member perception of safety while high intensity lighting and uniformed private security were reported to have 58% and 50% respectively. Lastly, 75% of respondents reported a positive effect of a tower immediately upon its deployment (Blackwood and Hayes, n.d.).

As there have been no empirical studies conducted on the effectiveness of a SkyWatch tower as a deterrent apparatus the focuses of this literature review will be on peer-reviewed

research on closed-circuit television cameras, integrated closed-circuit television cameras, and re-deployable closed-circuit cameras, utilized to deter criminal activity. These will be presented as each is utilized under the same theoretical underpinnings as SkyWatch towers and their method of surveillance is practically identical. SkyWatch towers not only can be equipped with CCTV camera systems, but additionally a law enforcement officer can be stationed in the deployed tower to conduct his/her/their own surveillance. Also included will be a brief discussion of the implementation barriers that have been found with CCTV system deployment, as well as the relationship between the presence of CCTV cameras and the perception of safety by community members.

Surveillance: Closed-Circuit Television

While the traditional law enforcement reaction to crime is to increase the certainty of apprehension and conviction of offenders by employing additional officers to conduct more street patrols (Akers & Sellers, 2013), research has demonstrated this is not the most effective method. Specifically, Eck and Maguire (2005) in a meta-analysis found that police had no significant effect on crime rate decreases and Kleck and Barnes (2014) showed increases in police per capita did not increase deterrent effects. In fact, a connection between the magnitude of police presence and crime rates has generally been dismissed (Felson, 1998; Gottfredson & Hirschi, 1990; Kelling et al., 1974; Klockars, 1983; Sherman, 1992; Sherman et al., 1997; Sherman & Weisburd, 1995; Skolnick & Bayley, 1986). While the debate over the effectiveness of certainty as a deterrent mechanism is ongoing (Klepper & Nagin, 1989; Mendes, 2004; Nagin, 2018; Paternoster, 2010) one such policing strategy that is formed on the principle of certainty of apprehension is the utilization of closed-circuit television cameras.

Application of technology to not only deter crime, but also aid in the formation of docile bodies, can be seen in the use of closed-circuit television cameras (CCTV). Gill and Spriggs (2005) provide the following description of closed-circuit televisions cameras:

Closed Circuit Television Cameras (CCTV) have become an important crime prevention and security measure. Cameras collect images, which are transferred to a monitor-recording device of some sort, where they are available to be watched, reviewed and/or stored. CCTV is a situational measure that enables a locale to be kept under surveillance remotely. This makes it possible for the police, and other law and regulatory agencies such as private security, to respond to incidents when alerted, and to have information about what to look for when they arrive. (p. 1)

These multi-faceted cameras are tools of surveillance that are utilized as a crime prevention approach by law enforcement and governmental agencies in numerous countries such as, Korea (Moon et al., 2015), South Africa (Minnaar, 2007), Spain (Cerezo, 2013), Poland (Matczak et al., 2021), United States (Caplan et al., 2011), and the United Kingdom (Gill & Spriggs, 2005).

The policing strategy of surveilling the population through the deployment of CCTV cameras however is not new. CCTV was first utilized in England during the late 1950's to assist police in the operation of traffic lights (Williams, 2003). It has been argued that this remote viewing capability can be a deterrent of crime as individuals hold the belief that their actions are being monitored thereby leading to the potential for certain and swift apprehension (Caplan et al., 2011). Furthermore, its use is supported by the framework of Situational Crime Prevention (SCP). SCP is a synthesis of rational choice and the routine activities approach which makes it quite applicable to promote the utilization of CCTV to address crime. Surveillance cameras utilize the principles of SCP in that if potential offenders are aware of them a certainty of

apprehension is present. This certainty thereby reduces the potential of gains that are able to be achieved by the criminal act (Debus-Sherrill et al., 2016).

Intertwined with SCP are two of the tenets of deterrence theory, certainty and celerity. Caplan and colleagues (2011) for instance suggest that CCTV can deter criminal activity by fostering the belief that one is being monitored, thus leading to certain and swift punishment. Additionally, in conducting interviews with prisoners Gill and Loveday (2003) highlight responses focused on certainty of apprehension and its value as a deterrent. In particular, they report that offenders noted a camera does not deter crime unless it is known to accompany a real threat of apprehension (Gill & Loveday, 2003). Additionally, swiftness of apprehension was reported by Own Correspondent as cited in Minnaar (2007). The author describes a CCTV system in South Africa that led to quick resolution of a criminal act by several offenders. A CCTV operator, being alerted to a stolen vehicle, initiated a rapid police deployment after observing the vehicle on street cameras which resulted in the apprehension of the occupants all within one minute and forty-five seconds from the time it was spotted on the CCTV system. Indeed, it is these two concepts of certainty and celerity, along with situational crime prevention, that are repeatedly cited in the literature as the theoretical rationale for utilizing CCTV cameras as a crime prevention tool (Circo, 2018; Farrington et al., 2007; Lim & Wilcox, 2017; Matczak et al., 2021; Park et al., 2016; Piza et al., 2014; Piza et al., 2019; Welsh and Farrington, 2004; Welsh & Farrington, 2009).

However, while conceptually the utilization of CCTV cameras as a deterrent mechanism is strong, results of empirical research on the effectiveness of CCTV surveillance has been mixed. This contradictory research can in part be explained by what authors Ditton and Short (1999) succinctly state: “It [CCTV] works in different ways in different situations...” (pp. 217-

218). In fact, two of the most glaring factors noted when comparing the differing results of CCTV effectiveness are, the environment the system is being utilized in and the types of criminal acts that are being evaluated for a deterrent effect. For instance, Poyner (1988) sought to assess the effectiveness of cameras mounted on public service buses to reduce issues of vandalism and general mischief in Britain. Based on reduced repair and cleaning costs, as well as the aid of the cameras in combatting driver assault and fare evasion, the implementation of surveillance devices on the buses was determined to be a success. In another United Kingdom based study focusing on London's underground transit system, CCTV cameras were shown to be effective in combating thefts, robberies, and vandalism within the first year of their installment (Burrows, 1979). Lastly, Chatterton and Frenzf (1994) evaluate the effects a CCTV system placed in an elderly housing residential complex. Their findings indicate a significant decline in the number of burglaries reported as well as improving the arrest rate of offenders contributed to camera recordings being utilized to assist in apprehensions and convictions.

Differing results are noted by Caplan and colleagues (2011) in their research into the effectiveness of CCTV surveillance in deterring shooting, thefts from vehicles and auto theft. Their data indicate that while use of such cameras lead to a decrease in car thefts, the surveillance monitoring had no effect on thefts from within the vehicles. Yet, completely opposing results were found by Poyner (1991). In analyzing the effectiveness of CCTV surveillance on a university campus open-air parking lot, thefts from vehicles were found to be drastically reduced. However, the impact of the presence of cameras on theft of cars and damage to cars was uncertain (Poyner, 1991). Ditton and Short (1999) note significant declines in crime with installation of CCTV in a small town, while the same technological implementation in a large city actually saw an increase in offenses. The authors do note that the city results should

not be taken as a blanket finding that CCTV cameras do not work, but rather that they provide advantages other than mass deterrence. Specifically, the cameras were beneficial for retrospective investigations and some specific criminal acts, although not for all crimes in general (Ditton & Short, 1999). Armitage (2002) noted this same vacillation in CCTV's effectiveness. In an evaluation commissioned by the UK Home Office, she reported that CCTV had no effect on violent crimes, a significant level of effect on vehicle crimes, and was most effective when utilized in parking lots.

Furthermore, in a 40-year meta-analysis Piza and colleagues (2019) found that the implementation of CCTV camera systems led to a modest and statistically significant decrease in crime. Similar to Armitage's (2002) findings Piza and his colleagues (2019) noted that the effectiveness of CCTV cameras was most consistent and the greatest when implemented in parking lots. Additionally, levels of crime were also found to be reduced in other settings, in particular residential areas (Piza et al., 2019).

The mixed results of the effectiveness of CCTV camera systems in parking lots (Armitage, 2002; Caplan et al., 2011; Gill & Spriggs, 2005; Poyner, 1991; Tilley, 1993; Welsh & Farrington, 2009) makes the effectiveness of SkyWatch towers deployed in similar locations essential for analysis. As the towers are marketed for utilization in parking lot surveillance and deterrence (FLIR, n.d.), establishing the validity of this claim is incorporated as a critical component of the current study. Additionally, evaluating a SkyWatch tower's impact on specific forms of crime, for example property versus violent, will be beneficial to see how the towers fare compared to the empirical literature on CCTV systems.

Implementation Barriers for Effectiveness

As Pease (1999) posits, “No public place...will be crime free if offenders have good reason to believe that they will not be recognised, or, if recognised, will not be reported to the police, or, if reported will escape meaningful criminal justice outcomes” (p. 49). While the presence of CCTV has been shown to improve the certainty of apprehension on a per case basis, specifically with incidents reported by CCTV resulting in case closures more often than when law enforcement officers are called for service, implementation concerns have been raised (Piza et al., 2014). In particular, the “certainty of punishment” principle fails to be fully maximized because of several implementation barriers. These include high amounts of cameras to a low number of operators, processing delays in police response, and additional duties of operators that do not allow for continual proactive monitoring (Piza et al., 2014). Even the organization of the command center where the surveillance monitoring takes place (Norris & McCahill, 2006; Smith, 2004) and the relationship between the operators and law enforcement personnel (Gill & Spriggs, 2005) need to be considered in any evaluation of CCTV camera effectiveness.

Caplan and colleagues (2011) highlight several other factors that should be considered when conducting an analysis of the presence of CCTV cameras as a strategy for deterrence. The authors demonstrated that the surveillance system was noted to significantly deter auto theft city-wide, however shootings and thefts from automobiles were only deterred within the range of view of the cameras. This is supported by Moon and colleagues (2015) who suggest that the installation, usage, and management of CCTV cameras needs to be in accordance with the specific criminal offenses of the area. To this point Caplan and colleagues (2011) posit that CCTV cameras monitored by the police would have a varying impact on deterring street crimes because of the vast differences in the criminogenic characteristics of each location.

As noted by Tilley (1993) if the certainty of apprehension loses its credibility any positive effect as a deterrent strategy will fade. With cameras too numerous for adequate surveillance by law enforcement personnel, and camera placement not properly employed, the effectiveness of CCTV cameras as crime preventive mechanisms is challenged mainly due to a lack of proper utilization. These implementation barriers of CCTV, especially the need for strategic placement, may be paralleled in the later analysis of the effectiveness of SkyWatch towers and will need to be considered.

Perceptions of Safety

As the effectiveness of CCTV cameras in deterring crime remains inconclusive for the variety of reasons previously mentioned, the public's perception of safety relating to the presence of CCTV system is also mixed. Some researchers note a decrease in community members' fear of crime (La Vigne et al., 2011; Ratcliffe, 2006) and perceived greater safety (Gill & Hemming, 2006; Reid & Andresen, 2012) when CCTV cameras are present. The installation of CCTV cameras has been argued to increase guardianship and aid in the reduction of crime (Welsh & Farrington, 2002). For instance, study results by Debus-Sherill and colleagues (2016) did not support the ability of cameras to deter violence in correctional settings, however they were shown to provide benefits for incident investigations and the perception of safety by the incarcerated individuals. In a study by Minnaar (2007) it was noted that citizens had concerns that CCTV surveillance would allow the local government to intrude into their private lives, but that the vast majority of citizens actually were calling for "the implementation of additional CCTV surveillance systems – even right into the heart of residential suburbs" (p. 197). Additionally, Chatterton and Frenzf (1994) note elderly individuals reported significantly

reduced levels of fear with the introduction of a CCTV system to combat burglaries in their specialized residential area.

Several researchers, however, demonstrate opposite findings when assessing the impact of CCTV cameras on the public's perceived feelings of safety (Ditton & Short, 1999; Gill et al., 2007). In fact, Gill and Spriggs (2005) in an evaluation of the impact of CCTV, found that the installation of CCTV systems made individuals worry more about crime. The authors note that community members that were aware of CCTV cameras being present made them think the area of installment was more problematic than they had believed previously and thus made them worry about crime more. This finding by Gill and Spriggs (2005) was similar to that of Cerezo (2013). Cerezo was unable to validate her hypothesis that individuals feel safer in areas where video surveillance has been implemented. Specifically, she found that people did not have significantly different perceptions of crime, in particular its frequency or the fear of victimization, between areas with CCTV and those without.

These mixed findings on the public's perception of safety where CCTV systems are utilized (Chatterton & Frenzf, 1994; Cerezo, 2013; Ditton & Short, 1999; Gill et al., 2007; Gill & Hemming, 2006; Gill & Spriggs, 2005; La Vigne et al., 2011; Ratcliffe, 2006; Reid & Andersen, 2012) is similar to the previously mentioned varied results regarding the effectiveness of CCTV cameras. The question therefore presents itself as to how the deployment of a SkyWatch tower will impact community members' perceptions of safety. The immense size of a tower makes it far from discrete and may intensify concerns that criminal activity is prevalent due to its presence. While this may increase an individual's fear of crime, as seen with the implementation of CCTV systems (Gill & Spriggs, 2005), the opposite effect is also possible. The clear sign of some form of police presence may lead citizens to be more at ease.

The Future of Closed-Circuit Television

Of the approximately 12,000 local and state law enforcement agencies within the United States 49% report using video surveillance to monitor public areas with utilization increasing to 87% by departments that have a jurisdiction population over 250,000 (Reaves, 2015). CCTV has been noted by some to be a “banal good” (Goold et al., 2013, p. 980) which has become a ubiquitous part of society members’ everyday lives (Piza et al., 2019). The issue that needs to be addressed, and which is quite relevant to the study at hand, is what is the future of CCTV? Skogan (2019) calls attention to the fact that numerous forms of surveillance technologies, from automated license plate readers and acoustic detection systems to drones, are rapidly being developed to play a complementary role alongside CCTV in preventing crime.

As researchers have found that actively monitored CCTV systems are more effective than those utilized with passive observation, many law enforcement agencies have integrated them with proactive monitoring and police response (Circo & McGarrell, 2021). The results of this strategy have been mixed. Piza and colleagues (2015) found a more effective result than “stand-alone” camera systems (p. 44) while in another study Piza and his colleagues (2017) noted that any benefits became insignificant due to police dispatching policies. Furthermore, Circo and McGarrell (2021) demonstrated that while the integration of CCTV systems being proactively monitored with police response increased the prevalence of previously unreported minor crimes, it had no impact on violent crimes. As there is negligible amount of research focused on the combination of proactive CCTV monitoring and police it provides this researcher with a rather uncharted course to also assess the effectiveness of SkyWatch towers from both a proactive and a passive lens.

An additional development in CCTV technology is that of home surveillance. From Ring doorbells to smart home security cameras the panoptic perspective has been brought into society's residential environment. For instance, Ring's motion-sensing doorbells allow individuals to not only see, but also respond to visitors through a couple of clicks on their smartphone (Harris, 2018). Ring reported a 55% reduction in burglaries, however since their study's dataset and methodology are not accessible by the public, the validity of this claim is questionable (Harris, 2018). Furthermore, while Ring doorbells allow an individual to monitor who may be outside their door, smart home security cameras allow for panoptic observations within the home (Pierce, 2019). The installation of these systems allows for the tracking and surveillance of individuals within the privacy of their own residences all in the name of home security (Pierce, 2018). With these new surveillance technologies citizens become active participants in being the watchers and the watched.

One last advancement in the utilization of CCTV camera systems that is especially relevant for this study is that of re-deployable CCTV (RCCTV). Waples and Gill (2006) describe RCCTV as the following:

Unlike static CCTV, where cameras are permanently installed in one location, and mobile CCTV systems, which are often operated from vehicles, RCCTV is designed to be moveable and fast deployable across a number of fixed locations within an area. Such locations range from lampposts and buildings to dedicated erected poles. RCCTV offers certain advantages over static systems including adaptability, flexibility and generally being less expensive to purchase. (pp. 1-2)

In evaluating the effectiveness of RCCTV by utilizing two case studies in the United Kingdom, Waples and Gill (2006) found no reduction in levels of crime, nor an increase in feelings of

safety by community members. Through intelligence-based deployment strategies each system was intended to target a crime hot spot, however due to a multitude of reasons, including time, money, and technical failures, the systems did not function as planned. Implementation failure, from planning and design to deployment of a RCCTV system, was also noted by Gill and colleagues (2006) as the underlying reason there was no impact on drug crimes as had previously been seen in other studies (Lupton et al., 2002; Mason & Bucke, 2002). As with the usage of integrated CCTV systems issues recognized in hindering RCCTV cameras effectiveness will be critical to be aware of in this current study.

As RCCTV is comparable in many regards to a SkyWatch tower the difficulties impeding the effectiveness of RCCTV, particularly the failures noted with its deployment protocol (Gill et al., 2006), is important to consider when evaluating the findings of this research. A SkyWatch surveillance tower is analogous to RCCTV in that both can be shifted, transported, and re-deployed in areas identified as needing a deterrent intervention. The two main differences between the two technologies are their sizes, a small camera versus a massive tower, and that a SkyWatch tower can be physically manned with a person inside. However, a SkyWatch tower can also be unmanned with the CCTV cameras attached to it sending footage directly to a monitored command center elsewhere, making the tower even more similar to RCCTV.

Summary and Conclusion

As stated at the beginning of this chapter there has only been one attempt at an empirical analysis to evaluate the effectiveness of SkyWatch surveillance towers. While Blackwood and Hayes (n.d.) provide data from an extremely small sample, and their work has not been peer-reviewed, they did find SkyWatch towers to have an overall perceived positive effect. Without any other prior literature, the researcher turned to the closest piece of surveillance technology

utilized by law enforcement personnel to draw parallels in the literature from; closed-caption television cameras. The effectiveness of CCTV in all of its forms, static, integrated, and re-deployable, has been met with mixed results depending on the deployment location, the types of criminal activity assessed, and even the implementation designs themselves. As we turn to the current study both the theoretical underpinnings previously presented, and the review of the most similar surveillance equipment, will be utilized as the foundation to empirically analyze, with both validity and reliability, the effectiveness of SkyWatch surveillance towers as deterrent apparatuses.

CHAPTER FOUR: METHODOLOGY

As previously stated, the purpose of this study was a multi-step evaluation of one of law enforcement's newest technological methods for conducting surveillance; SkyWatch. SkyWatch towers are a 27-foot transportable mobile surveillance platform manufactured by Teledyne FLIR Systems Incorporated (FLIR, n.d.). Each tower can be deployed within minutes and provides an officer with the ability to monitor large areas for criminal behavior with a 360-degree viewing capability (FLIR, n.d.). What would have taken three or more officers on the ground to patrol, a SkyWatch tower enables a single officer to deploy, operate, and observe that area. Understanding law enforcement personnel's own perceptions of whether SkyWatch towers are an effective crime prevention strategy is essential, as well as statistically evaluating the accuracy of these notions.

This study sought to understand perceptions of law enforcement personnel, as well as assess the veracity of their beliefs, by employing a sequential triangulation mixed method procedure (Morse, 1991). Within the qualitative portion the aim was to explore SkyWatch as a panoptic deterrent apparatus and its potential impact on crime through interviews with key stakeholders. Specifically, 20 semi-structured interviews of personnel within 16 different law enforcement agencies, as well as one with the manufacturer of SkyWatch itself, were conducted to gather information about SkyWatch and the key aspects of deploying SkyWatch within jurisdictions.

Through the quantitative piece calls for service in the surrounding areas of a tower's deployment were statistically analyzed to evaluate the anecdotal perceptions of the towers' deterrent effect compiled during the qualitative interview process. The researcher requested calls for service data under the Freedom of Information Act from law enforcement agencies that had

previously participated in the qualitative component of the study, Montgomery Police Department, Aventura Police Department, Bedford Police Department, Charlotte-Mecklenburg Police Department, and additionally, Garland Police Department.

Mixed Methods

In this study a mixed methods analysis was utilized, as the aim was to have the thoughts and perceptions gathered in the qualitative phase, guide the direction of the quantitative portion. Rather than provide an exact definition for mixed methods research, as there are numerous definitions (Creswell & Plano Clark, 2017; Wilkes et al., 2021), there are four components that comprise this methodological design. They are a qualitative and quantitative piece, an integration of the two, and ultimately a heightened understanding formulated from the strengths found in each approach (Plano Clark & Ivankova, 2016, as cited in Wilkes et al., 2021).

Historically criminological and criminal justice-based researchers have predominantly employed quantitative and qualitative methods, with mixed methods approaches being used sparingly (Wilkes et al., 2021). However, mixed methods methodology has been seen in an ever-increasing amount of criminology and criminal justice research over the last several years (Brent & Kraska, 2010; Wilkes et al., 2021). While Shaw's (1966) iconic study, *The Jack Roller*, utilized both a quantitative and qualitative approach, and other researchers delved deeply into qualitative work with extremely influential ethnographies (Anderson, 1999; Moskos; 2008), mixed methods articles only account for 1.4% to 9.6% of published work in criminology and criminal justice journals (Crow & Symkla; 2013; Tewksbury et al., 2005).

The utilization of mixed methods methodologies has been championed by many scholars with the numerous advantages in conducting such analyses being well-recognized (Creswell, 2014; Greene, 2008; Johnson & Onwuegbuzie, 2004; Maruna, 2010; Teddlie & Tashakkori,

2010; Trahan & Stewart, 2013; Wilkes et al., 2021). As a mixed-method approach is more time-consuming and challenging than single methodological studies it is the commitment to the quality of the data and the allegiance to the topic under analysis that drives the researcher (Maruna, 2010). A mixed methods methodology has five primary purposes, which are as follows:

- (a) Triangulation: Convergence or corroboration of results via different methods.
 - (b) Complementarity: Elaboration, enhancement, or clarification of the results of one method through the use of another.
 - (c) Initiation: Seeking out contradictory findings that could help reframe the research question or model.
 - (d) Development: Using the findings from one type of research to inform another.
 - (e) Expansion: Expanding the range or breadth of the research through multiple methods.
- (Greene et al., 1989, as cited in Maruna, 2010, p.127)

The current study combines several of these purposes, from triangulation, to development, and expansion. Specifically, the findings that emerged from the qualitative component drove the development of the research hypotheses in the quantitative phase. This development specifically allowed for the merging of the qualitative component's discoveries with the results from the quantitative one, to allow for an expansion of research into the deterrent effectiveness of SkyWatch towers. The use of this mixed methods approach in analyzing law enforcement's utilization and deployment of SkyWatch towers had never been done before and thus required a multi-pronged approach to garner a full understanding of this phenomena.

The advantages in employing a mixed methods design to explore research questions are plentiful and include the ability to obtain a more in-depth understanding (Wilkes et al., 2021), as

well as being able to address questions that cannot be analyzed through a single method procedure (Creswell & Plano Clark, 2017). Additionally, new insights into a particular topic can be garnered that surpass those obtained through a single method design (Creswell & Plano Clark, 2017), and as suggested by Greene et al. (1989), through the evaluation of the interaction between the qualitative and quantitative components a much broader picture can emerge which can enhance the study's findings. By combining both qualitative and quantitative methodologies the research can benefit from the generalizability of quantitatively driven results, while at the same time using the qualitatively generated findings to provide a rich, contextual background (Greene & Caracelli, 2003).

As with all research methods there are disadvantages to be recognized and mixed methods designs are no different. Such drawbacks include researcher limitations, as some may be more comfortable with statistical inferences and analysis while others may be better equipped to handle interpersonal exchanges, administration difficulties, criticisms by other researchers who do not support mixed method designs, and the potential vagueness in this type of approach as there are no hard and fast guidelines (Brent & Kraska, 2010). Maruna (2010) also notes several disadvantages present in the literature. From researchers falling flat of their aims to triangulate the data, to the argument that qualitative and quantitative designs are just not compatible with each other. Still, as Maruna (2010) concludes, there are significantly more benefits achieved using a mixed methods approach, rather than a mono-methodological one, "so why not go both ways" (p. 123).

Sequential Triangulation

When two methodologies are utilized to address the same research problem methodological triangulation has been noted to have occurred (Morse, 1991). Sequential

triangulation being defined as the collection and analysis of data in two separate stages and using two distinct methods, with the findings of the first phase being corroborated by the results of the second (Creswell, 2014). Sequential triangulation is to be used if the results compiled from one method are requisite for designing the next method (Morse, 1991). Here the qualitative component can be conducted prior to the quantitative one or the other way around (Morse, 1991). The first step in determining the order of the process is to ascertain whether the research question is fundamentally qualitative or quantitative. To do this properly Morse (1991) suggests the following:

Characteristics of a qualitative research problem are: (a) the concept is “immature” due to a conspicuous lack of theory and previous research; (b) a notion that the available theory may be inaccurate, inappropriate, incorrect, or biased; (c) a need exists to explore and describe the phenomena and to develop theory; or (d) the nature of the phenomenon may not be suited to quantitative measures. (p. 120)

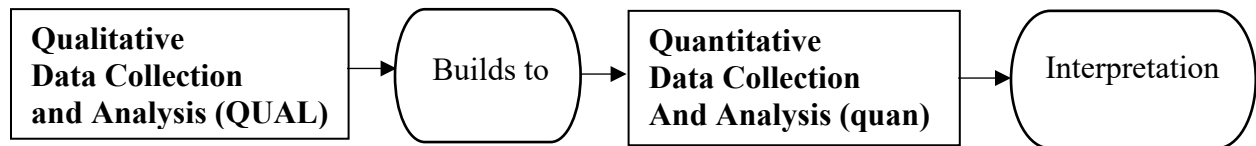
As noted previously there has been no peer-reviewed empirical research conducted on law enforcement agencies use of SkyWatch towers regardless of the hundreds of thousands of dollars invested in their purchase and the potential effects of their deployment. Based on these factors there is a need to investigate how law enforcement officers tasked with deploying and manning these towers perceive the theoretical logistics behind their use, as well their own experience relating to the operation and deployment of them. Determining this first step, that a qualitative approach will be the most appropriate to begin answering these research questions, is essential to planning the appropriate methodological approach. Therefore, for purposes of this study sequential triangulation, specifically an exploratory sequential mixed methods design, was employed.

Exploratory Sequential Mixed Methods Design

When a qualitative stage is conducted first and a quantitative stage follows it is considered an exploratory sequential mixed methods approach (Creswell, 2014; Maruna, 2010; Trahan & Stewart, 2013). The purpose of this approach is to build upon the findings from the initial phase (Creswell, 2014). According to Morse (1991) if the research process follows this inductive process, whereby the developing theory arises from qualitative methods which then lead to a quantitative phase, the sequential triangulation can be notated as “QUAL → quan” (p. 121). By capitalizing the first part the reader is to understand the emphasis is on the qualitative data with the arrow denoting how that data builds to the lesser prioritized quantitative data (Creswell, 2014). See Figure 2 for a more visual representation.

Figure 2

Exploratory Sequential Mixed Methods



Note: Adapted from Research Design: Qualitative, Quantitative, and Mixed Methods

Approaches, by Creswell, 2014, p.220. Copyright 2014 by SAGE.

In the current study the results from a qualitative data collection method, specifically semi-structured interviews were utilized to guide the following quantitative component. The aim within this research was to explore and understand from a law enforcement officer’s point-of-view the acquisition, utilization, and deployment of SkyWatch towers and then to assess the validity of these perceptions through measurable variables. Maruna (2010) notes how a researcher, in utilizing this approach, collects data qualitatively as a “voyage of discovery”

which then yield “grounded hypotheses that can then be confirmed, rejected, or qualified through quantitative testing” (p. 129).

Research Questions (Qualitative)

As this was a mixed methods analysis there were several research questions that guided the study. For the qualitative component the overarching aim was to garner an understanding of not only law enforcement personnel’s own perceptions of the theoretical logistics behind the utilization of SkyWatch towers, but also their own experience relating to the operation and deployment of them. Additionally, the research questions were formulated to provide a foundation for the quantitative exploration where law enforcement agents’ perspective on the effectiveness of SkyWatch towers usage was to be ascertained. Based on these two guiding concepts the qualitative data collection was directed at answering the following research questions.

1. Why do law enforcement agencies purchase a SkyWatch tower?
2. How are SkyWatch towers utilized by law enforcement agencies?
3. How do law enforcement agencies decide to deploy a SkyWatch tower?
4. What do law enforcement officers think about the utilization of a SkyWatch surveillance tower as a tool for deterring crime?

Data Collection (Qualitative)

For this study semi-structured interviews were utilized. The interviews were conducted with key law enforcement personnel. The use of semi-structured interviews was chosen as they allow for an open dialogue between the researcher and the participant (DeJonckheere & Vaughn, 2019). Additionally, they allow for the interview protocol to be more flexible and augmented with follow-up questions and comments (DeJonckheere & Vaughn, 2019). In this manner a vital

benefit of a semi-structured interview is that it focuses on the experience lived by the interview subject while also focusing on variables of interest that are directed by theory (Galletta, 2012).

Theoretical sampling, a form of purposive non-probability sampling that emerged from Glasser and Strauss' (1967) grounded theory approach and which is iterative in nature (Wilmot, 2005), was utilized. This is important as it allows the researcher to analyze the data and add or adjust the sample design as sampling progresses (Wilmot, 2005). Through this process the robustness of the theories formed can be ensured (Wilmot, 2005). Ultimately, this sampling frame, "a quasi-list of units composing a population from which a sample is selected" (Maxfield & Babbie, 2016, p. 317) was generated for the current study.

As there is no statistical analysis in qualitative research more innovation regarding sampling is allowable (Ishak & Bakar, 2014). The main objective is to obtain a specific sampling frame that incorporates participants that will allow for an in-depth understanding of the phenomenon under study (Ishak & Bakar, 2014). To create the sampling frame within the current study the manufacturer of SkyWatch towers, Teledyne FLIR, was contacted to request a list of law enforcement agencies throughout the United States that were known to have a least one SkyWatch tower. A telephone interview was conducted at this time with the Sales Director of Teledyne FLIR, which is the manufacturer of SkyWatch towers. Afterward the Sales Director provided the researcher with a list of 194 law enforcement agencies which had acquired at least one tower. Additionally, internet searches of any media attention given to SkyWatch towers was conducted as another method of ascertaining which law enforcement departments had towers.

Initially, those agencies that were within a 300-mile radius, or an approximate maximum of a four-hour drive, from the researcher were contacted. This specific radius was selected to maximize the potential for in-person interviews, versus those that would require ones to be

conducted via the telephone. There were 10 such agencies identified however only two agreed to participate in the study. The researcher was able to attend a law enforcement community event where the interview was conducted in a raised tower. While at the event the researcher was also able to conduct several other interviews with officers that had previously manned the tower on other occasions.

After depleting the potential for in-person interviews the researcher moved in an alphabetical fashion through the remaining 183 law enforcement agencies on the list. The researcher contacted 43 of them and 13 agreed to telephone interviews. The researcher sought to interview personnel of the department, a law enforcement agent or civilian, that had knowledge or personal experience with a SkyWatch tower deployment. Within these interviews an understanding of SkyWatch surveillance tower deployment strategies, the standard operating procedure, including the location of deployment, the length of deployment, and the staffing requirements was examined.

The law enforcement agencies noted by Teledyne FLIR to have at least one SkyWatch tower were contacted via telephone to confirm that they did have a tower and to determine who was the individual responsible for the utilization and deployment of it. Once an individual was identified, and initial contact made, an email was sent to the law enforcement officer or staff member fully describing the study and asking if they would be willing to participate in an interview. A recruitment letter that was sent electronically, once participation in the study had been verbally discussed with the recipient, is included in Appendix A. A detailed electronic log of all steps taken to recruit participants for the study was kept and updated regularly. At a minimum this log included the name of the law enforcement agency contacted, the date of contact, the telephone number utilized to make contact, the names of each person spoken to, as

well as what was said, and any other relevant information such as email addresses for future contact.

Lastly, as this qualitative component of the research involved the participation of human subjects it did not qualify for Institutional Review Board exemption. Therefore, an application for research approval was completed, and with the required documentation, sent to the University of New Haven's Institutional Review Board (IRB). An expedited review was requested and approval for the research was granted. The IRB protocol number was 2019-032.

Saturation

The number of interviews to be conducted was originally planned for between 20 and 30, although these numbers were rather arbitrary as reaching a saturation level could not be predetermined (Fusch & Ness, 2015; Guest et al., 2006; Saunders et al, 2018). In fact, Morse (1995) notes, "saturation is the key to excellent qualitative work, [however] there are no published guidelines or tests of adequacy for estimating the sample size required to reach saturation" (p. 147). Still to allow for some frame of reference 20 to 30 participants for a grounded theory approach has been recommended by researchers (Creswell & Poth, 2017; Morse, 1994). Although Bertaux (1991, as cited in Guest et al. 2006), put an even lower minimum number of participants of 15 for qualitative research, Kuzel (1992) suggested a middle ground with 12 to 20 data sources being the best to achieve the highest level of variation.

While Fusch and Ness (2015) argue saturation is a hard concept to define, Glaser and Straus (1967) described it in the following terms:

The criterion for judging when to stop sampling the different groups pertinent to a category is the category's theoretical saturation. Saturation means that no additional data are being found whereby the sociologist can develop properties of the category.

As he sees similar instances over and over again, the researcher becomes empirically confident that a category is saturated. He goes out of his way to look for groups that stretch diversity of data as far as possible, just to make certain that saturation is based on the widest possible range of data on the category (p. 61).

With that being said there is also not a “one-size-fits-all” method to achieve the goal of saturation (Fusch & Ness, 2015, p. 1409).

Guest and colleagues (2006) suggest that data saturation occurs when there are no new data, themes, or coding. These inadvertently all go hand and hand, as if there are no new themes, then there is no new data, and therefore, no new coding can be done (O'Reilly & Parker, 2012). In particular when the interviews are being utilized the exact number of interviews needed to reach saturation is not a set amount (Bernard, 2012), but what should be noted is that all the interviewees should be consistently asked the same questions so that reaching the point of saturation does not become a continually moving goal (Guest et al., 2006). Ultimately, in the current study 20 interviews were conducted with law enforcement personnel, as well as one interview with a representative from the manufacturer of SkyWatch, as the researcher determined no new data was being obtained as the interviewee responses became redundant in nature. This guideline of ceasing data collection is supported by prior research (Charmaz, 2014; Glaser & Strauss, 1967), and was utilized to determine when the interview process of the qualitative phase should end.

Interview Protocol and Procedure

Each interview lasted on average 35 minutes with a consent form being completed prior to the interview's commencement. See Appendix B for the consent form that was utilized. The interviews were planned to be recorded, with consent provided by the interviewee, and later

electronically transcribed, however none of the participants agreed to this. Therefore, as electronic recordings were not permissible, hand-written notes were taken by the researcher and later manually transcribed into a Word document. To ensure the utmost confidentiality of the subjects' interviews, the transcriptions were kept in a password-protected folder on a computer in the Henry C. Lee College of Criminal Justice and Forensic Sciences. The information provided by the subject on the consent form consisted of their name (printed and signed) and the date. These forms, as they contain names, were kept in a locked filing cabinet in the Lee College under the care of Co-Principal Investigator Dr. Kevin Barnes-Ceeney.

Subjects were interviewed in a private room or over the telephone by the researcher. As previously noted, a semi-structured interview approach was adopted in order to draw out rich descriptions of experiences rather than cursory answers (Rubin & Rubin, 2005). A protocol was utilized to guide each interview; however, the protocol was used as a focusing tool rather than an interview framework. The interview protocol is included in Appendix C. A reflexive "conversational partnership" was fostered (Rubin & Rubin, 2005, p. 79), with reflections, summarizations and additional open-ended questions responsive to the participant's narrative, seeking to elucidate "depth, detail, vividness, richness and nuance" (Rubin & Rubin, 2005, p. 129). The interview protocol served as an outline for a conversation about the subject's knowledge of FLIR SkyWatch, its utilization, and deployment protocols.

The interviews focused on reasons for the acquisition of the tower, deployment protocols of the tower, utilization of the tower, training to use the tower, and personal perspectives relative to the efficacy of the tower. The researcher sought to garner an understanding of SkyWatch towers as a crime prevention instrument and in particular, whether the utilization of the towers was to demonstrate a certainty and swiftness of apprehension or if they were to act as capable

guardians to prevent offending. These conversational partnerships occurred with the researcher guiding an extended discussion, in a responsive interviewing design, that was flexible and adaptive to each interviewee (Rubin & Rubin, 2005). The process was iterative, in that simultaneous data analysis allowed for informed data collection, so as to not have communication that occurred in a mechanical, understated manner (Kuper et al., 2008; Rubin & Rubin, 2005). In some instances, the departmental personnel interviewed were civilians tasked with SkyWatch tower deployment and utilization, while others will be with sworn law enforcement officers. The recruitment of additional participants ceased when a saturation point was reached during the first level coding of the transcribed interviews. This occurred when the addition of new participants ceased to add anything new to the study and data replication become evident (Marshall et al., 2013).

Data Analysis (Qualitative)

Line-by-line Coding

Notes from the interviews were transcribed, as detailed previously, from handwritten notes. In the initial coding a grounded theory approach, utilizing a line-by-line review, was conducted to allow the themes to emerge from the data (Charmaz, 2014). The use of a grounded theory approach was chosen as it allows for the generation of theory while also ensuring a comprehensiveness in methodology (Glaser & Strauss, 1967; Walker & Myrick 2006). Additionally, Strauss and Corbin (1998) posit use of this initial coding format allows for the qualitative data to be broken down into separate sections that can be then analyzed closely and assessed for likeness as well as dissimilarities. In utilizing this line-by-line approach the data was verified and saturation of each category was achieved (Glaser & Holton, 2004). This method also ensured that the potential to miss a category is minimal while also allowing the relevance of

codes that were relative to the area of study to be maximized (Glaser & Holton, 2004). Lastly, as Line-by-line review, as an initial coding process, has been noted to be most fitting for interview transcripts (Charmaz, 2014) it was determined to be suitable for this study.

An example of this first level of coding is provided in Table 2. After transcription of the interviews the researcher reviewed them several times to ensure the data was understood and in a manageable format to work with. When constructing a table for this coding process two columns were generated. In the first column was the raw data, specifically the data transcribed from the notes and recordings. In the second column the researcher placed detailed initial codes taken from the participants own words through Line-by-line coding. Each participant's transcript was read and analyzed separately. This was done so that the researcher could identify the emerging ideas and views that were presented by each interviewee.

Table 2

Open Coding (Line-by-line coding): A Sample from an Interview

Participants views (Extracted from transcripts)	Open coding (Line-by-line coding using Gerunds)
-Acquired 7-8 years ago. Used for crowd management, overwatch at major events. Also, a billboard for Sheriff's department. Meant to be highly visible.	Utilized for crowd management and overwatch at major events Billboard for Sheriff's Department Meant to be highly visible
-Would not purchase another one as no use to duplicate when could use tower currently have. Not huge demand. Only few events have practical demand. Total time raised and deployed only ¼ time manned.	Purchasing another not going to happen as not huge demand. Only few events have practical demand. Manning only ¼ time deployed.

Table 2 Continued

Participants views (Extracted from transcripts)	Open coding (Line-by-line coding using Gerunds)
-Having blue lights up creates presence. People don't know whether being watch or not.	Having blue lights on tower creates presence. People don't know whether being watched or not.

Constant Comparison Method

The constant comparison method by Glaser (1965) was then utilized to form second level themes. During this step the SkyWatch tower experiences of one interviewee were compared to the experiences of another interviewee (Boeije, 2002). These comparisons allowed for the enrichment of information and provide a better understanding of differing perspectives (Boeije, 2002). Specifically, the researcher followed the steps as suggested by Boeije (2002). First, the Line-by-line coding that was completed previously for each interview allowed the researcher to begin comparing each of the interviews. During this review “themes” developed that allowed for the grouping of similar responses from the study participants (Boeije, 2002, p. 397). A “code tree” was utilized and filled until there are no further themes identified (Boeije, 2002, p. 398). Table 3 is an example of such a “code tree”.

Table 3

An Example of Themes and Subthemes Found in the Utilization and Deployment of SkyWatch Towers

Themes/subthemes	Dimensions of Themes
Potential Impact on Crime	Noticing of crime level difference when go to move to another location
Deterrence	Believes very effective tool Believes just a deterrent
Surveillance	Surveillance and deterrence in parking lots

Table 3 Continued

Themes/subthemes	Dimensions of Themes
Policing	Deters crime and offers different vantage point from street level Watching of people and things around requires eyes. Tower provides view of distance with minimal resources

In the first column the themes that emerge from the interviewees' words were recorded with the second column containing the actual words that were captured in the Line-by-line coding. The second column became a combination of all the participants' responses as they relate to the overarching concept identified. With this secondary coding being combined with the first level of coding (Boeije, 2002; Charmaz, 2014) the researcher could ensure the understanding of SkyWatch was driven from participants voices, rather than cherry picking themes.

While the researcher recognized that there are several computer-assisted qualitative analysis software (CAQDAS) programs, such as QDA Miner, NVivo, and Atlas/ti, available to assist in analyzing the qualitative data (Leech & Onwuegbuzie, 2010), they were not utilized for several reasons. First, Leech and Onwuegbuzie (2010) note that in a constant comparison methodology CAQDAS software can limit the discovery of codes by the researcher. Additionally, other forms of connections between the data may not be recognized and may be missed (Leech & Onwuegbuzie, 2010). For the current study the researcher felt conducting a manually produced constant comparison method would allow for a more controlled and nuanced development of the data that was collected through the interview process. With this paper-based approach extreme organization was critical to ensure the order of the data analyzed and that

nothing was lost. The security of the data was achieved by keeping the papers in a locked cabinet that only the researcher and Dr. Barnes-Ceeney had access to.

Additionally, memoing, a technique utilized by a researcher to make “conceptual leaps from raw data to those abstractions that explain research phenomena in the context with which is examined” (Birks et al., 2008, p. 68) was employed. As qualitative research places a strong focus on meaning that is contextually situated, memoing assists the researcher in creating a shared understanding with a study’s participants regarding the topic being studied, while also ensuring there is quality present in the research process (Birks et al., 2008). Within the current study memoing was used to detail the researcher’s activities, to gather meaning from the data generated through the interview process, and to document the researcher’s perspective for a later review. An example of the memoing notes is included in Appendix D.

With qualitative research predetermined concepts are not to be imposed (Wilmot, 2005). Instead, the data that emerges from the participants’ own understanding and interpretation of the phenomena being studied is to be utilized to generate theory and hypotheses (Wilmot, 2005). The advantages with this form of research are that it allows for a focus of meanings on a more individual level, as well as recognizing and addressing the nuances and complexities of certain situations (Creswell, 2014). In the current study the qualitative component allowed the researcher to obtain a more in-depth knowledge of law enforcement personnel’s perceptions of their utilization and deployment of SkyWatch towers.

Summary (Qualitative)

Through the above semi-structured interviews this portion of the study sought to gather information to establish a grounded theory formed from law enforcement’s utilization of FLIR SkyWatch, a mobile surveillance tower, that aims to deter crime using an aerial perspective. To

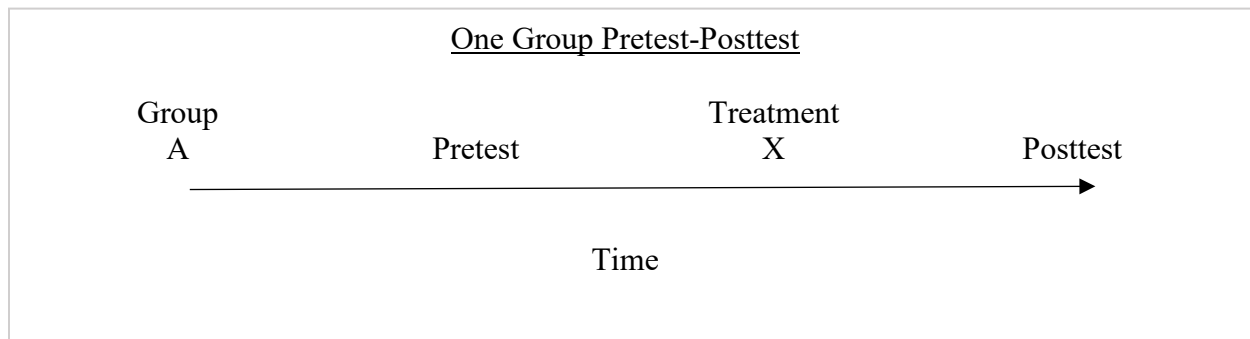
accomplish this goal the research questions identified, and utilized to generate the interview protocol, were focused on several key components. These included why law enforcement agencies acquire a tower, how a tower is deployed and utilized, and lastly the perspectives of law enforcement personnel regarding a SkyWatch tower as a deterrence mechanism. From this last research question, the perceptions of a SkyWatch tower as a method to deter criminal activity, the question becomes whether a SkyWatch tower's effectiveness as a deterrent apparatus can be quantified. The next phase of the current study was an attempt to answer that exact research question.

Research Questions (Quantitative)

In the quantitative section the rather broad research question presented is whether SkyWatch surveillance towers are an effective crime prevention strategy. Effective, as derived from the qualitative interview phase, as meaning a decrease for calls for police service in the areas of a SkyWatch tower deployment location. As seen with closed-circuit television camera systems, which are implemented under the same theoretical principles as SkyWatch towers, there needs to be a process by which the towers, as deterrent mechanisms, are evaluated. To accomplish this within the current study a quasi-experimental design of before and after with follow-up was utilized. Figure 3 depicts this design. A quasi-experimental design, one in which subjects cannot be randomly assigned (Maxfield & Babbie, 2016), was utilized as the tower placement could not be randomized.

Figure 3

One Group Pretest-Posttest



Note. Adapted from “Evaluation novelty in modeling-based and interactive engagement instruction,” by F. Örnek, 2007, *Eurasia Journal of Mathematics, Science & Technology Education*, 3(3), p. 234. Copyright 2007 by Moment.

Within the current study the pretest, or before intervention phase, consisted of the collection of the number of calls for service within the district, or when possible, within a quarter of a mile radius of a SkyWatch tower’s future deployment location. The period of data collection for the pretest included two weeks prior to a tower being deployed. The treatment, or intervention stage, was when a SkyWatch tower was deployed. The calls for service within the district, or when possible, a smaller radius surrounding the tower during this deployment period were collected. These calls for service were collected from Montgomery Police Department in Alabama, Aventura Police Department in Florida, Charlotte-Mecklenburg Police Department in North Carolina, Bedford Police Department in Texas, and Garland Police Department, also in Texas, for the year 2019. To be included in the study each of these agencies had to have at least one SkyWatch tower that was deployed in at least three different locations during three different periods. These locations were to be parking lots with a minimum deployment of two days.

Calls for service were defined as citizens calls to law enforcement agencies to request service (Pierce & Warner, 1993). The selection of calls for service as a proxy for crime has been well-supported in the literature with studies assessing the stability of crime patterns (Andresen & Malleson, 2011); robbery trends at the neighborhood level (Bursik et al., 1990); indicators to estimate crime trends (Bursik & Grasmick, 1993); effects of police patrol in hot spot areas (Sherman & Weisburd, 1995); application of spatial data in support of routine activities theory (Sherman et al., 1989); criminal careers in public places (Spelman, 1995); and a reexamination of social disorganization theory (Warner & Pierce, 1993).

The period of time for this data varied depending on the tower's length of deployment. Lastly, there was a period of data collection after the tower was moved, the posttest phase. This data again consisted of calls for service within the district, or if possible, a smaller radius surrounding the SkyWatch tower's past deployment location. The period for this data collection was a period of two weeks after the tower had been removed. With the collection and analysis of these calls for service the research question posed, are SkyWatch towers effective as a deterrent apparatus, was addressed. In answering this question procedures and policies for tower utilization and deployment can be guided by evidence-based recommendations.

Research Hypotheses (Quantitative)

As previously noted, the principles of the utilization and deployment of SkyWatch surveillance towers are akin to those of closed-circuit television cameras. Based on these fundamental similarities it seems the goals of CCTV systems, to reduce crime and improve public safety (Isnard, 2001), can also be incorporated into the objectives in deploying SkyWatch towers. The marketing of SkyWatch towers centers on their ability to assist in reducing and deterring criminal activity within the area of a deployment location. Specifically, the key

applications of SkyWatch towers, as noted by FLIR (n.d.), are for areas high in crime and for parking lot surveillance and deterrence. These goals of deterrence and reduction in crime when a tower is deployed shaped the research hypotheses presented next.

H₁: There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower between when one is deployed versus when one is not.

A parallel hypothesis, evaluating rates of crimes, can be found in past empirical research devoted to the evaluation of the effectiveness of CCTV camera systems (Armitage et al., 1999; Caplan et al., 2011; Ditton & Short, 1999; Gill & Spriggs, 2005; Farrington et al., 2007; Piza et al., 2014; Poyner, 1991; Tilley, 1993).

H₂: There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower, relating to property crimes, between when a tower is deployed versus when one is not.

Several studies have assessed the impact CCTV camera systems have on property crime (Piza et al., 2014; Welsh & Farrington, 2009).

H₃: There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower, relating to thefts from motor vehicles, when a tower is deployed versus when one is not.

Tilley (1993) and Poyner (1991) both evaluated the specific effects of utilizing a CCTV camera system in parking lots to deter thefts from motor vehicles.

H₄: There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower, relating to motor vehicle thefts, when a tower is deployed versus when one is not.

Again, work by Tilley (1993) and Poyner (1991) focused directly on the efficacy of the usage of CCTV camera systems in parking lots as a method of deterring motor vehicle thefts.

H₅: There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower, relating to crimes against person, when a tower is deployed and when one is not.

This hypothesis has been evaluated in relation to the utilization of CCTV camera systems both in the United States (Piza et., 2014) and combination of the United States and the United Kingdom (Welsh & Farrington, 2009).

Data Collection: Quantitative

In this quantitative portion of the study, which is focused on the deployment locations of SkyWatch towers and the corresponding calls for service in these areas, five law enforcement agencies provided data for analysis. While this study does not fit exactly with the guidelines of a multi-center approach the main advantage of this method can be similarly achieved by utilizing multiple data collection sites in the current study (Weisburd & Taxman, 2000). Specifically, Weisburd and Taxman note a “multi-center model will allow for a statistically powerful research design for analyzing overall treatment impacts at the same time” (p. 328). Therefore, in attempting to develop a statistically strong research design the current study’s approach in utilizing several different jurisdictions to evaluate the impact of SkyWatch tower deployments was supported. The following criteria was met to include a law enforcement agency in this phase: the agency must have least one SkyWatch tower which is deployed on three separate occasions in at least three different locations. The length of deployment had to be a minimum of two days. The year 2019 was selected for data collection as it was prior to the COVID-19 pandemic and not too far removed from the current year so tower deployment records were

accessible. Additionally, only locations where a tower was deployed in parking areas, particularly of shopping centers, restaurants, movie theaters, or even parks or neighborhood areas was included. A tower's usage at a one-time, large-scale event such as a concert or a sporting event was not included as the research design of this study required a pre-test baseline of data. Without an event occurring these locations, such as stadiums or outdoor concert venues, remain minimally to populated so if indeed there were any calls for police service, they would be disproportionate to when there was an affair being hosted.

The tower deployment locations, specifically the addresses and dates of deployment, were sought through correspondence with the law enforcement agent that was responsible for their department's SkyWatch program. Once this information was received calls for service in the corresponding district of the tower's deployment, ideally within a quarter of a mile radius of the tower deployment site, were requested. The calls for service requested were for a two-week period before the tower was deployed, during the tower's deployment, and two weeks after the tower's removal. Also, requested for inclusion in the call for service logs was the information presented in Table 4. While some of the information, such as the dates of a SkyWatch tower deployment, may not be specifically included in the calls for service logs, all information directly pertaining to the call of service should be. The researcher manually added in the data relating specifically to the SkyWatch tower after receipt of it from the agency SkyWatch coordinator.

Table 4*Information to be Included with Calls for Service*

Information requested from law enforcement agencies
State where SkyWatch deployed
City where SkyWatch deployed
District/Zone where SkyWatch deployed
Address of SkyWatch deployment
Dates of SkyWatch deployment (xx/xx/xxxx)
Location of SkyWatch deployment
e.g.: Buffalo Wild Wings parking lot
Shops at Central Park
Walmart parking lot
Date of call for service (xx/xx/xxxx)
Time of call for service
District/Zone of call for service
Address of call for service
Description of call for service
e.g.: Theft MV; burglary of MV; assault; larceny

The researcher contacted 12 of the law enforcement agencies that had previously participated in the qualitative component of the study, as well as an additional 25 from the list previously provided by the Sales Director from Teledyne FLIR. As in the qualitative phase the researcher sought to confirm the agency did indeed have a SkyWatch tower and to ascertain who was responsible for the deployment. From said individual the researcher sought to obtain the location information of the tower(s), such as date of deployment, location of deployment, and date of removal. Once this tower utilization schedule was received the researcher then requested the calls for service around the tower(s) deployment location under the Freedom of Information Act from the law enforcement agencies. Additionally, a detailed electronic log of all steps taken to recruit participants for the study was kept and updated regularly. At a minimum this log included the name of the law enforcement agency contacted, the date of contact, the telephone

number utilized to make contact, the names of each person spoken to, as well as what was said, and any other relevant information such as email addresses for future contact.

Lastly, as even though this quantitative component of the research did involve the participation of human subjects an application to the Institutional Review Board was made. The application for research approval was completed and sent to the University of New Haven's Institutional Review Board. An exempted project review was requested and approval for the research was granted. The IRB protocol number was 2022-003.

Variables

Independent Variable

The independent variable in this study is dichotomous and recognizes whether the intervention is present or not. The intervention introduced will be the deployment of a SkyWatch aerial surveillance tower.

Dependent Variables

There will be several different dependent variables incorporated, to not only evaluate the effectiveness of a SkyWatch tower as deterrent apparatus, but also those necessary to assess each of the research hypotheses previously discussed. Both continuous and categorical dependent variables were utilized. Table 5 illustrates the specific dependent variables that were incorporated into the data analysis, as well as the type and level of measurement of each variable.

Table 5*Dependent Variables and Their Corresponding Types*

Dependent variable	Type of variable and level of measurement
Total Calls for Service by Day	Continuous/Ratio
Total Calls for Service by Day Relating to Thefts <i>from</i> Motor Vehicles	Continuous/Ratio
Total Calls for Service by Day Relating to Theft <i>of</i> Motor Vehicles	Continuous/Ratio
Total Calls for Service by Day Relating to Property Crimes	Continuous/Ratio
Total Calls for Service by Day Relating to Violent Crimes	Continuous/Ratio

It should be noted here that property crimes included those as defined by the Federal Bureau of Investigation's Uniform Crime Report (UCR). Specifically, "property crimes include offenses of burglary, larceny-theft, motor vehicle theft, and arson. The object of the theft-type offenses is the taking of money or property, but there is no force or threat of force against the victims" (United States Department of Justice-Federal Bureau of Investigation, 2010, para. 1). Furthermore, violent crimes included those as defined by the Federal Bureau of Investigation's Uniform Crime Reporting program as "[those] composed of four offenses: murder and nonnegligent manslaughter, forcible rape, robbery, and aggravated assault. Violent crimes are defined in the UCR Program as those offenses which involve force or threat of force" (United States Department of Justice-Federal Bureau of Investigation, 2011, para. 1). To be able to parse

out those crimes that did not clearly fall under the broad UCR categories utilization of the National Incident-Based Reporting Systems (NIBRS) was also incorporated. Each offense collected in NIBRS is categorized as crimes against persons, crimes against property, or crimes against society (United States Department of Justice-Federal Bureau of Investigation, 2019). Those offenses that matched with offenses considered a crime against person or a crime against property were kept in the dataset for analysis.

Data Analysis: Quantitative

Upon receipt of the data, it was transferred to SPSS for statistical analysis from the original format it was received in. Within each dataset the call for service date and time, address, crime description, whether a tower was deployed, and if a tower was deployed its location, was included. SPSS was employed to run descriptive analyses, and other appropriate statistical tests such as independent samples t-tests.

Descriptive Analysis

As each dataset was received from the participating law enforcement agency statistical analysis, beginning with a series of descriptive statistics, was conducted. Descriptive statistics were utilized here to both organize and detail the characteristics of the collected data (Salkind, 2017). As this study has only one independent variable, but numerous dependent variables, a summary of each of these variables provided the researcher with a strong foundation with which to continue further quantitative analyses. Therefore, descriptive statistics for each variable included in the study were conducted and are presented.

Bivariate Analysis

Once each dataset had descriptive statistics produced a bivariate analysis was performed. Bivariate analysis is performed to ascertain the relationship between two variables (Sandilands,

2014). Independent samples t-tests were utilized to assess the relationships between the variables presented in this study.

Independent Samples T-Tests

In utilizing an independent t-test the researcher was looking to compare the difference in means between two groups (Salkind, 2017). To accomplish this there needed to be two groups that could be compared against one another and a continuous dependent variable (Salkind, 2017). Within the current study the two groups consisted of the presence of a SkyWatch tower and the absence of a SkyWatch tower. There were several dependent variables, that were measured on a continuous scale, which were analyzed for comparison. They included the total number of calls for service by day, the total number of calls for service relating to property crimes by day and the total number of calls for service relating to violent crimes by day. Additionally, the number of calls for service relating to thefts *of* motor vehicles by day and the total number of calls for service relating to thefts *from* motor vehicles by day were also evaluated. It is with this statistical analysis that the association between the independent variable, the SkyWatch tower, and each of the noted dependent variables could be properly assessed. Additionally, independent samples t-tests are appropriate method for a before and after research design (Salkind, 2017) which makes them ideal for this study.

Summary (Quantitative)

SkyWatch surveillance towers are marketed to law enforcement agencies, United States Department of Defense for their installations, and prison and detention centers worldwide (FLIR, n.d.). Among the applications they are noted to be of use for two are most applicable to this study. One is areas of high crime and the other is surveillance and deterrence in parking lots (FLIR, n.d.). With over 200 law enforcement agencies in the United States currently owning and

deploying at least one tower it is important to empirically test whether the deployment of a tower meets the desired goals. The quantitative phase of this study is aimed not only at providing an objective analysis of the available data, but also to discuss these findings in context of SkyWatch's mission statement, to deter crime. This is not only to fill a vast gap in the literature on this surveillance-based policing strategy, but also is important from a policy and procedural perspective.

CHAPTER FIVE: QUALITATIVE FINDINGS

The following chapter will detail the findings from the qualitative stage of this study. However, before they are presented I, as the researcher, offer a positionality statement to ensure full transparency for the reader.

Positionality Statement

Positionality, that which describes the overall views of an individual and their acquired position taken pertaining to a research project, is essential to recognize (Holmes, 2020). According to Holmes (2020) it is especially important to share this positionality when presenting one's research as its influence is critical to be aware of throughout. Roberts and colleagues (2020) note that a positionality statement allows for "transparency in how the identities of the authors relate to the research topic and to the identity of the participants" (p. 1305). Additionally, including this positionality statement allowed myself to work through a deep reflexivity process while conducting the research. As offered by Martin and colleagues (2022) "this process of reflection offers the opportunity to examine the impact of our research decisions through the lens of our social identities" (p. v). Throughout this study I needed to be reflexive on my own background and experiences and how they influenced my research decisions.

I am a 42-year-old white female that literally had ancestors arriving straight from England on the Mayflower. I was not a child of the richest one percent in the world, that in 2015 owned more wealth than the rest of the world (Hardoon, 2017), but on the other hand, I am not one of the hundreds of millions that are concerned with having access to safe drinking water, basic education, or sufficient nutrition (Barak, 2007). I spent over a decade working alongside law enforcement officers and agencies as a board-certified medicolegal death investigator. I also happen to be married to an individual who has been a law enforcement officer for over 28 years.

While the quantitative findings are presented from an unfettered perspective as much as possible, those from the qualitative stage are ones in which my own subjectivity was embraced. Not only do Garcia and Quek (1997) note when conducting qualitative research, a “researcher’s subjectivity is an essential part of the research process” (p. 453), but Potter and Levine-Donnerstein (1999) argue that objectivity “is not a reasonable expectation for the coding of latent content” (p. 263). There were even occasions where I had to use my own employment background, or that of my husband’s, to garner credibility with participants so that an interview would be agreed to. In the end, I felt those interviewed were more candid with me because of the work I did and my marriage to another individual in the law enforcement field. A trust was developed over a common assumed ideology that allowed for more transparency and unfiltered responses from the participants. The issue of interviewees responding in a socially desirable manner was recognized throughout the process, however as Martin and colleagues (2020) note there is a value in a researcher’s social identity aiding in building rapport and trust with participants. I feel that occurred here in this study and was vitally important. Rather than receive a static response from participants, that might have been more guarded with their thoughts had I not disclosed some of my personal experiences, I instead was able to have more of the conversational partnership that I was aiming for in the interview process.

Lastly, it is to be noted that I, as the researcher, did not receive any funding or incentives from Teledyne FLIR for conducting this research study. There are no conflicts of interest that need to be shared.

Findings: Qualitative

In total, 20 semi-structured interviews were conducted with law enforcement personnel who were involved with the utilization and deployment of SkyWatch towers across the United

States. An additional interview, for a total of 21 interviews, was conducted with the Sales Director of Teledyne FLIR, the manufacturer of SkyWatch towers. First cycle Attribute Coding, a process that is particularly appropriate for qualitative studies where there are multiple participants and locations (Saldeña, 2016) was conducted. An overview of some of the Attribute Codes and descriptors, determined by the researcher, is presented in Table 6.

Table 6

Overview of Attribute Codes and Descriptors for Interviewees

Gender	City, State	Position/Rank	Data Format
Male	Aventura, Florida	Civilian-Crime Prevention Coordinator	Telephone
Male	Buffalo, New York	Civilian-Camera System Administrator	Telephone
Male	Newark, New Jersey	Civilian-Director of Intelligence	In-Person
Male	Ocean City, New Jersey	Sheriff	In-Person
Female	Ocean City, New Jersey	Sergeant	In-Person
Male	Ocean City, New Jersey	Detective	In-Person
Male	Baldwin County, Alabama	Captain	Telephone
Male	Clarksville, Tennessee	Sergeant	Telephone
Male	Corpus Christi, Texas	Officer	Telephone
Male	Dallas, Texas	Corporal	Telephone
Male	Davie, Florida	Officer	Telephone
Male	Eufaula, Texas	Officer	Telephone
Male	Montgomery, Alabama	Major	Telephone

Table 6 Continued

Gender	City, State	Position/Rank	Data Format
Male	Atlantic City, New Jersey	Deputy Chief	Telephone
Female	Bedford, Texas	Volunteer Civilian-Police Service Volunteer Coordinator	Telephone
Male	Carlsbad, California	Lieutenant	Telephone
Male	Charlotte-Mecklenburg, North Carolina	Staff Sergeant	Telephone
Male	City of Irving, Texas	Officer	Telephone
Male	Ocean City, New Jersey	Civilian-Emergency Management	In-Person
Male	-----	Sales Director	Telephone
Male	Ocean City, New Jersey	Sheriff's Department Chaplain/Community Member	In-Person

Ninety percent of those interviewed were male, with 86% of the interviewees being males in law enforcement. This dominance of males within the sample was not surprising considering the national distribution of the male-dominated personnel within law enforcement in the United States (United States Department of Justice-Federal Bureau of Investigation, 2017).

Approximately 20 percent were ranked officers while approximately 50 percent were ranked sergeant or higher. Thirty percent were civilians working for law enforcement agencies. Eighty-six percent of the interviews occurred over the telephone.

Upon completion of the above Attribute Coding, another first cycle component of coding, Line-by-line coding was conducted. The notes from each interview, which when combined totaled 84 pages of typed material, was reviewed line-by-line utilizing Charmaz's (2014) grounded theory approach. Through this process, the themes within the data were allowed to emerge organically. An example of one of the interviews with Line-by-line coding conducted is presented in Table 7.

Table 7

Interview Buffalo (New York) Police Department, August 1, 2019

Participant views (Extracted from transcripts)	First cycle coding (Line-by-line coding)
<ul style="list-style-type: none"> -with PD for last 8 ½ years. Prior was chief photographer for regional sports network in NY -Responsible for making sure all cameras and systems up and functioning. -250 cameras throughout city. 84 cameras in central booking. 104 cameras in police headquarters. -Also oversees network of 51 license plate recognition cameras in fixed strategic spots throughout city. -Have 24/7 real-time center. Work closely with crime analysis center. -Department has 550 sworn officers. 5 police districts. Higher crime districts have more cameras. Ex. 70 cameras in downtown area. -Tower used for large scale events. Have lots of festivities in city. Usually have command bus that goes hand and hand with tower. When tower deployed can view cameras from each unit at command bus, command center 	<ul style="list-style-type: none"> Responsible for making sure all cameras/systems functioning Utilized for large scale events Command bus that goes hand in hand w/ tower Viewing of cameras from command bus, real time camera center, and have remote access

Table 7 Continued

Participant views (Extracted from transcripts)	First cycle coding (Line-by-line coding)
<p>-A lot of use May-September. In June have Black History Festival (Juneteenth Festival). Huge law enforcement presence. Then Taste of Buffalo in July. Tower there. Next, Italian Heritage Festival. Usually, tower placed on same street and in same area.</p> <p>-Also have summer concert series that tower used at. Have had out in entertainment district day before Thanksgiving. Also, Ball Drop at New Year's celebration.</p> <p>-If tower out pictures (video) instantly comes up in camera room.</p> <p>-Purchased w/ Homeland Security money. Purchased in 2012. Former commissioner saw tower while on vacation and thought needed in Buffalo for all events. Got grant people to get ball rolling.</p> <p>-Last 2 years tower at every Buffalo Bills home game. Used to monitor parking lot situations. Loaned to Erie County Sheriff's Department for this. Another avenue to monitor trouble areas in parking lots. Manned w/ deputy that uses binoculars to view lot and radio if incident occurs. Ex. fights or unruly behavior</p> <p>-When tower used by outside agency PD sends a babysitting officer.</p> <p>-Need heavy duty vehicle to tow, plus 2 people for set-up. He usually administrator to explain the camera system. Camera feed recorded and can be used as evidence later if incident.</p> <p>-Has MCT in tower. That means a computer that equal to that of one in patrol cars. Can run license plates, have full access to look up people, use email.</p>	<p>Other events Juneteenth Festival, Taste of Buffalo, Italian Heritage Festival</p> <p>Utilized at summer concerts, entertainment district day before Thanksgiving, and ball drop at New Year's celebration Placed same street in same area for most events Viewing of video instantly in camera room when tower deployed Purchased w/ Homeland Security money Seen on vacation by former commissioner and thought needed for event</p> <p>Deployed at every Buffalo Bills home game</p> <p>Monitoring trouble areas in parking lots</p> <p>Viewing of lot w/ binoculars by deputy in tower and radio to use if incident, fights/unruly behavior occurs</p> <p>Needing heavy duty truck to pull plus two people to set-up. Recording of camera feed and can be used as evidence if incident</p> <p>MCT (computer equal to that of one in patrol car) in tower Running license plates and access to look people up</p>

Table 7 Continued

Participant views (Extracted from transcripts)	First cycle coding (Line-by-line coding)
<p>-2 cameras on tower to provide 360-degree coverage. Have simple PA system and siren. Ex. Can use spotlight to direct officers on ground to where incident (fight) is located.</p> <p>-Tower is self-sufficient. Generator-when gas tank filled-can run for 7 days straight on diesel fuel.</p> <p>-Hard to tell if someone in tower. Most time try to have manned but not necessary b/c of how set-up with cameras. Have live-feed and remote access.</p> <p>-Have person assigned to watch tower camera in command center. Ex. have camera on tower point down and can watch for vandalism. This if tower left out overnight and unmanned.</p> <p>-Mainly just used for events. Have not put in neighborhood. Would need to have detail care to watch it in those neighborhoods and OT at premium.</p> <p>-Have used camera trailers for issues in neighborhoods. Ex. Neighborhood had issues w/ property damage due to construction in area.</p> <p>-Goal of tower is to have presence there. For people at event the tower gives sense of security to know police presence there. An intimidating presence. Not know when anyone in there. Ex. He was in tower at choke point of St. Patrick's Day parade. There was a guy on ground (no fencing around tower which was not usual) and he started bouncing/jumping on fender of tower. The officer in the tower yelled down to "knock it off". Guy moved off in shock. People around were shocked someone was in it.</p> <p>-Have had mayor in tower if at event to allow looking over crowd.</p> <p>-Tower deployed for duration of events.</p>	<p>Providing 360-degree coverage w/ 2 cameras. PA system and siren Directing officers to incident (fight) using spotlight. Self-sufficient. Running on generator for 7 days</p> <p>Hard to tell if someone in tower. Trying to have manned most time, but not necessary b/c have cameras w/ live-feed and remote access Assigning person to watch tower in command center Camera pointing down to watch for vandalism if tower left out overnight Not putting in neighborhoods as would need detail to care and watch and OT at premium</p> <p>Camera trailers used for issues in neighborhoods (property damage due to construction area)</p> <p>Goal of tower is to have presence. Giving sense of security to know police there. Intimidating presence. Not knowing when anyone there. At St. Patrick's Day parade guy on ground jumping on fender of tower and when officer in tower yelled down to "knock it off" guy moved off shocked. People around shocked someone in it.</p> <p>Allowing mayor in at event to look over crowd</p> <p>Deployed duration of events</p>

Table 7 Continued

Participant views (Extracted from transcripts)	First cycle coding (Line-by-line coding)
<p>-Think acts as deterrent BUT if someone going to commit crime going to do it anyway. Fun to know people not sure whether tower working/manned. Ex. Have had shootings/narcotics usage right in front of cameras and people say “oh, I didn’t think camera working. Just a prop”. Cameras don’t deter.</p> <p>- Chief of districts/ Lieutenant of Planning can request tower after working w/ organizers of event.</p> <p>-Gets used effectively. Ex. 2016(August) Presidential Election. Tower put at main entrance of arena. Not much video coverage. Officer in tower (SWAT officer and himself). Had one camera w/ wide shot on screening/checkpoint area. Other camera was put on the one door used as entrance. Put directly on door so would have facial shot/good description if incident occurred.</p> <p>-Try to make safe for everyone. Goal is to make event safe for everyone attending. Safe atmosphere for event.</p> <p>-The one negative to tower is if officer in tower and something does happen feel trapped. Want to get out and to interact. Depends on officer whether negative point or not.</p> <p>-Training: FLIR representative training for him personally. The rest of training informal. Up/down process. Safety rules posted. 1. Secure lanyard on door. 2. Policy is 25 mph wind sustained then tower comes down. 3. If flashes of lightening seen the tower goes down and officer out of it.</p>	<p>Thinking deterrent but if someone going to commit crime going to do anyway Enjoys knowing people not sure whether working/manned Shootings and narcotics usage right in front Of cameras and people say “oh, I didn’t think camera working” or “just a prop”. Cameras don’t deter Requested by chief of districts/Lieutenant of Planning</p> <p>Used effectively. August 2016 Presidential Election tower placed entrance of arena where not much video coverage. One camera wide shot on screening/checkpoint area and other on door used as entrance. Pointing directly at entrance. Meant to secure facial shot/good description if incident occurred.</p> <p>Making safe for everyone attending event.</p> <p>Feeling trapped if incident occurs when officer in tower</p> <p>Training initially by FLIR representative and then rest informally Several safety rules such as securing door, bring down w/ sustained winds or flashes of lightning</p>

Table 7 Continued

Participant views (Extracted from transcripts)	First cycle coding (Line-by-line coding)
-When Homeland Security had lots of funding lots of “toys” bought. Items bought just to buy. Gave example of town in upstate NY that bought hovercraft to do rescues on ice during winter. Never used. Sold at big loss. Tower not one of those toys. Gets a lot of use.	Buying items just to buy when Homeland Security had lots of funding. Local PD got hovercraft to do rescues on ice during winter but never used. Sold at big loss. Tower not one of those toys as gets a lot of use.
-No feedback about presence of tower at event. Some complaints regarding footprint/size. Tower takes up 2 parking spaces wide and 2 parking spaces deep.	Lacking feedback about presence Complaining about footprint/size
-Use of tower starts Sunday before Memorial Day. Have the Buffalo Marathon (7700 runners in 2019). Tower at finish line. Big security presence. Depends on intel that have whether tower manned. Work hand and hand with FBI, local sheriff’s department, and State Police.	Used for Buffalo Marathon (7700 runners in 2019) for big security presence Manning depends on intel Working hand in hand with FBI, local sheriff’s department, and state police

After the initial codes were identified, those taken from the participants own words through Line-by-line coding as seen above in Table 7, the researcher moved to form second level themes through Glaser’s (1965) constant comparison method. A “code tree” of these second level themes was developed through comparing the Line-by-line coding from the interviews with each other (Boeije, 2002, p. 397). Through this review, themes emerged that allowed the researcher to group similar responses from the study participants. An example of how the code tree was formed is shown in Table 8.

Table 8*Themes and Subthemes Found in the Utilization and Deployment of SkyWatch Towers*

Themes/Subthemes	Dimensions of Themes
Surveillance	<p>Keep in rotation at high traffic areas, like gyms and retail stores like Dick's Sporting Goods, because have to have high visibility</p> <p>Deployed for big events such as Taste of Charlotte, Speed Street with NASCAR, and Fourth of July</p>
Omnipresence	<p>People know law enforcement there</p> <p>Big security presence</p>
Panoptic	<p>People do not know whether being watched or not</p> <p>Make people not know if anybody in it because dark and tinted windows</p>
Policing	<p>Monitoring trouble areas in parking lots</p> <p>Different approach to surveillance</p>
Potential Impact on Crime	
Deterrence	<p>Seeing tower shows police presence and presence gives deterrence capability</p> <p>Utilized as deterrent to crime trends in specific areas</p> <p>Unsure if can attribute reduced crime rate to extra officers in area, extra attention, or tower</p> <p>Some impact with tower but not sure all due to tower presence</p>
Community Safety	<p>Letting people enjoy what they are doing and not have to worry about security</p> <p>Comforting the public</p>

Table 8 Continued

Themes/Subthemes	Dimensions of Themes
Community/Business Feelings	Love when on properties Positive feedback from citizens People say “I see that thing and I park right next to it” Requests by shopping plazas to return Complaining about footprint size Some lunatic complaining constant government surveillance, but no expectation of privacy in Target parking lot

Four overarching themes, surveillance, potential impact on crime, community safety, and community feelings emerged from the participants words. Additionally, nuanced underlying themes such as omnipresence, panoptic, policing, and deterrence were also discovered. The following sections provide the details of the findings.

Surveillance

Study participants revealed that SkyWatch towers have been utilized during a wide variety of recent public events including the BMX Championships in Rockhill, South Carolina, NASCAR races in Concord, North Carolina, the Hang Out Music Festival, Alabama (the fifth largest music festival in the country), the Buffalo Marathon, New York, the Ducks and Decoy Show, New Jersey, and the Miss America Pageant Parade, New Jersey. Towers were also reported to be commonly used in parking lots of Walmart, Target, large restaurant areas, and cinemas, all of which were identified as city hotspots for vehicle theft and burglary from automobiles.

Panopticism, Omnipresence, and Policing

Participants spoke of the SkyWatch tower as a panoptic policing strategy. Many noted that it is hard to tell if anyone is in the tower making individuals question if indeed, they are being observed or not. This perception was further elaborated by several participants (14, 67%) that indicated SkyWatch creates uncertainty for those on the ground as to whether surveillance is being conducted by law enforcement which in turn causes them to modify their behavior. Participants reflected that the inside of the tower's platform utilizes an aerial perspective to provide an omnipresent view from an elevated position while outwardly making it difficult to tell if anyone is indeed inside observing the behavior of those on the ground.

The vantage point from the elevated platform of SkyWatch was noted by participants (9, 43%) to be essential for security at festivals, an "overwatch" of sorts. The aerial view provides the officer in the tower with much broader observational capabilities than an officer on the ground as stated by a participant. It was suggested by participants (6, 29%) that patterns and behaviors of individuals can be studied from a fixed position, which makes observation easier and more effective, than from a roving ground patrol. Participants (16, 76%) noted that eyes are required to watch people and objects in an area and with a SkyWatch tower a view of greater distances is achievable with minimal resources. With crowds composed of tens of thousands of individuals participants felt that crowd control is extremely important for the safety of all event attendees and is assisted by having an elevated position.

Participants (4, 19%) noted that ideally the goal is to have no incidents occur at events and gatherings, however if crime occurs participants reported that an individual in the tower can contact police dispatch to have an officer respond. Participants (4, 19%) also discussed how the tower can aid officers if incidents such as fights are spotted, as ground support can be directed

precisely to the incident location. Furthermore, the use of a spotlight by a tower operator can assist tracking and apprehension of an offender within a large mass of people. Additionally, one participant suggested that the tower's aerial perspective could be utilized to direct ambulances in medical calls and aid in finding missing children.

Community Safety

Many participants (15, 71%) commented that they felt the primary goal for deploying a SkyWatch tower was to ensure the well-being of the citizens within their jurisdictions. One participant noted how surveillance from the tower helped achieve community safety through watching for runaway vehicles and improvised explosive devices. Law enforcement personnel argued that the presence of the tower allows citizens to enjoy what they are doing as they do not have to worry about security. The perception of several participants (5, 24%) was that the public find comfort when SkyWatch is deployed. As one law enforcement agent noted, "a police officer's job is to make sure people can enjoy their lives by ensuring the bubble, they live their life in, stays intact and safeguarded" (PO#3, male, white, sergeant). As the interviewees are law enforcement officers themselves, they may have a bias regarding the safety they feel they provide.

Potential Impact on Crime

Deterrence

Perceptions of participants (18, 86%) was that seeing a SkyWatch tower shows a police presence, and that this presence provides deterrence capability. The majority of interviewees (19, 90%) reported that a tower would be deployed to a certain area depending on crime trend analysis. Utilizing this hot spot deployment strategy most participants (20, 95%) felt that the tower presents a great, big visual deterrent, and one participant even stated how the tower "is

very bold and in your face” (PO#13, white, male, officer) The tower is clearly marked with police insignia, blue lights, and even flood lights, to further increase its visibility. As one officer paraphrased from Sir Robert Peel, “it is all about visibility. Law enforcement should not be undercover as the uniform prevents crime” (PO#2, white, male, major). The tower is a symbol of police presence which is more noticed than cameras and “more in your face than CCTV” (Civilian#1, white, male). The idea being, “who would come break into a car with a tower right there?” (PO#5, white, female, sergeant). A comparison of the significant effectiveness of CCTV in car parks (Welsh & Farrington, 2009; Piza et al., 2019) within the interview generated one of the research questions in the quantitative phase. Specifically, the data collected and analyzed attempted to evaluate a SkyWatch tower’s effectiveness as a deterrent for thefts from motor vehicles.

Some interviewees (4, 19%) did posit a rather skeptical view of SkyWatch and the tower’s deterrent capabilities. For some (2, 10%) it was noted crime trends were impacted, however it was felt that the deployment of the tower was not the only factor in such declines. Extra officers in the area and the additional attention paid to specific locations were suggested as other contributing components in the affect seen on crime rates. One interviewee stated he did not believe there had been a “golly gee” (PO#7, white, male, officer) reduction in crime. Another noted that “the tower equates to ankle bracelet monitoring in that it is easier to determine who the suspect is, but it will never make crime stop completely” (PO#18, white, male, staff sergeant). Crime remained an issue for many departments with shootings and narcotics usage occurring right in front of the tower. One officer, summing up his thoughts succinctly, stated SkyWatch “does not deter crime, people still act like assholes” (PO#16, white, male, officer).

Yet, still while the tower may not actually act as a deterrent there was an overall consensus that it makes citizens feel better about their personal safety when a tower is present.

Community/Business Feelings

When considering a new policing strategy, such as SkyWatch, it is imperative to consider the effect on community relations where the approach is to be employed. Participants (17, 81%) felt that when a SkyWatch tower is deployed the public knows where police are which is just as important as having police present. The participants (7, 33%) noted that at events with large crowds an individual may not know where the closest police officer is, however if a tower is present finding an officer for assistance is much easier. Many participants (15, 71%) perceived having citizens knowing where to go for help is a critical aspect in providing public safety. This seems more than just an intuitive statement as a citizen really might not know where to go to find help and having an apparatus with such presence would definitely make that clearer.

Throughout the conducted interviews quotes such as, “the community likes the tower” (Civilian#1, white, male) and “the community feels safer” (PO#15, white, male, lieutenant) were often heard. Citizens were also noted by interviewees to park closer to the tower than the stores and to commonly tell them that “I see that thing and park right next to it” (PO#3, white, male, corporal). SkyWatch appears to give some people a sense of security as people know that police are there. The tower was believed to make people feel better, providing peace of mind, and was believed to foster friendships between the community and police. One law enforcement officer interviewed commented that he wants to take his family to a new shopping center where a SkyWatch tower was deployed as he knows his car will not get broken into, there will be no fights, and no incidents (PO#9, white, male, officer).

Property managers and business owners were reported by participants to greatly appreciate when SkyWatch is deployed at their locations and have often requested the return of the tower once it has been moved elsewhere. Managers have reported to law enforcement personnel that having SkyWatch around is “like having our own special police officer” (Civilian#10, white, male) and “employees, and patrons alike, feel safer because with the tower deployed people know police are around or in the area” (PO#15, white, male, lieutenant). The participants interviewed felt that the tower not only provides a sense of security for patrons, but also makes business managers and property owners more comfortable knowing they have a safe, secure environment. These apparent positive relations that have been developed between the police and their communities when SkyWatch has been deployed should be considered, however the fact that those individuals that speak to the operators may not be representative of the general population, must also be recognized.

A handful of negative community reactions to a SkyWatch deployment were noted throughout the interviews. One interviewee noted citizen concern over the cost of the tower, but as it had been purchased from seized drug money, he considered the basis for the complaint unfounded. Another individual reported “some lunatic complaining about constant government surveillance but was explained to that there was no expectation of privacy in a Target parking lot” (Civilian#14, white, male). It was further explained that this grievance was documented however it was determined to be unfounded.

The only other criticisms of SkyWatch relayed by participants (2, 10%) pertained to its size and the amount of space its “footprint” took up at events and in parking lots. The tower was noted at one event to be a visual obstruction and therefore, was not requested for re-deployment the following year. A deployment issue also was reported to have occurred when a tower was

placed in a Lowe's parking lot. The placement of the tower was such that a citizen felt someone inside could see right into his apartment thereby invading his privacy. Lastly, an event manager asked for a tower to not be deployed at his event again as "it seemed like a concentration camp guard tower" (PO#19, white, male, captain).

During the interview process I was afforded the opportunity to have a first-hand experience with a deployed SkyWatch tower. Having been able to participate in this event I was able to develop my own perspective of how a tower was utilized. Additionally, this aided me in understanding, having experienced it to some extent myself, what the interviewees spoke of when detailing their work within the tower. I share my experience here to offer the reader a sense of what it is like to see a tower in real life, not just an image in print, but also to be inside one fully deployed. While I was able to only conduct 29% of the qualitative interviews in-person, one of those interviews was inside a SkyWatch tower. When I contacted the law enforcement agency in Ocean City, New Jersey an individual high in command invited me to a community event to not only meet with several members of his department to discuss their deployment and utilization of a SkyWatch tower, but also to see the department's tower being used. Upon arrival to Lakewood, New Jersey via train I was met by a detective with the agency. He transported me to a First Responders Day event being held in a Hasidic Jewish community in Ocean City, New Jersey. Upon arrival at the event, I saw a large crowd of over 200 men, women, and children that were milling about a large open grass area the size of approximately two football fields. It was explained to me that the purpose of the event was to strengthen relations between the local community and area first responders, such as law enforcement and fire department personnel. There were firetrucks of varying sizes for the children to climb in and pretend to drive as well as law enforcement cruisers, a mobile command center, and the SkyWatch tower.

After being introduced to the high command officer that had invited me to the event, I was brought over to the agency's SkyWatch tower and the Emergency Management civilian that was in-charge of the tower's utilization and deployment. At this time the SkyWatch tower was not deployed and was resting on the ground. The operator welcomed me to step inside the tower. The tower was roomier than I had expected, approximately the size of a generous-size elevator. While the tower was on the ground, with its door open, it appeared to be a cube with cameras on the four upper corners, windows on all sides, and a bunch of buttons inside. However, after the operator closed the door with us inside and raised the tower to its full deployment height, the tower took on a new dimension.

At over 27-feet in the air with viewing capability out of all sides of the tower, I could see for what seemed like miles. I went from being in a large crowd of condensed people on the ground, to being able to pick out individuals a block away. I was even able to see those directly beneath the tower as the operator activated a camera that descended from underneath the flooring area. The tower's internal size seemed smaller when fully deployed but I attributed that to the fact there were two of us now in it, and that there was something to being raised so high in the air that was disorientating.

During the forty minutes it took to conduct the interview, all while I was in the raised tower, I was able to keep an eye on all that was going on at the event. At one point, the civilian even explained how he had observation training, not for use solely on SkyWatch but for CCTV systems as well, so he could contact law enforcement personnel on the ground if he saw anything suspicious. I garnered an appreciation for how the tower worked to direct ground patrol agents to incidents, to keep a visual on crowds of people in an expansive area, and to even watch for behavior of individuals that may be of concern.

When we returned to the ground and went to exit the tower, the civilian accidentally nudged a community member who happened to be near the door when he opened it. The community member made a comment to the effect that he had no idea someone, never mind two of us, were actually in the tower, and was surprised to see us. As I had such clear visibility from the raised tower it was interesting to hear a person on the ground perspective that seeing inside the tower was not possible.

I conducted several more interviews with law enforcement from the department that had experience with the tower, as well as one with the high command officer who had been responsible for the tower's purchase. While viewing the tower on the ground at the community event I noticed how it demonstrated a law enforcement presence. It was clearly marked with the agency's name and had red and blue lights present. However, with the tower raised these lights and insignia truly became more vivid, and "in your face" (PO#13, white male, officer) as had been previously expressed by another participant.

CHAPTER SIX: QUALITATIVE DISCUSSION AND CONCLUSIONS

Within this chapter the findings from the qualitative phase of the study and how they were found to tie in with the theoretical framework presented earlier will be discussed.

Interviewees reflections on their own agencies' utilization and deployment of a SkyWatch tower are laced with foundational underpinnings of deterrence and routine activities theories. While the exact theoretical reasoning may not have been voiced by the participants the framework of each theory was clearly seen throughout the course of the data collection process and will be detailed in the next section.

Discussion: Qualitative

Promoted as a crime prevention tool, SkyWatch towers reflect the principles seen in Bentham's panopticon. The towers provide their own moveable all-seeing gaze that aims to deter crime. Like Bentham's panoptic prison structures, SkyWatch is an apparatus billed to promote disciplinary perfection by making it possible to see everything constantly with a single gaze. The majority of participants in this study expressed a belief that those individuals near a deployed SkyWatch tower may modify their behavior as they are unsure if surveillance is being conducted from inside. In this manner, the deterrent elements of certainty and celerity are exemplified as all offenses can potentially be observed and addressed with immediate action (Foucault, 1977). As Foucault suggests, "it is possible to intervene at any moment and because the constant pressure acts even before the offences, mistakes or crimes have been committed" (p. 206). It is possible that through a technique of omnipresence criminal behavior can be at least moderately curtailed. SkyWatch is showcased as the apparatus to conduct this all-seeing gaze in a public setting.

As both research and the underlying principles of deterrence theory suggest, the certainty of punishment has more value as a deterrent than the severity of the issued punishment

(Andenaes, 1974; Nagin, 2012). SkyWatch was often noted as a tool a police department could use to deter crime either actively or passively. The use of the cameras located on the tower assist in offering an alternative level of certainty of apprehension to having an officer physically present within. Video feeds from tower cameras were analyzed after an incident to identify suspects, to assist with the creation of descriptions of suspects for bulletins, and as evidence for criminal proceedings. While several interviewees admitted they had no empirical data to support their claims that SkyWatch was a good deterrent, it was often mentioned anecdotally that “a difference in the crime level would occur when a tower was moved” (PO#4, white, male, sheriff), or “100% never had a major issue when it was deployed” (PO#6, white, male, detective). Utilizing this reasoning, the participants expressed they felt the SkyWatch tower was a successful crime prevention tool. Agencies reported apprehension of suspects for assaults with deadly weapons, arrests for larcenies from automobiles, and overall, a decrease in crime rates, especially in parking lots, when a tower goes up.

The participants’ own words not only demonstrated clear principles of deterrence theory in relation to the utilization and deployment of SkyWatch towers but also showcased how routine activities theory is also applicable. As previously discussed, Cohen and Felson (1979) argued that crime will occur when there is a motivated offender, a suitable target, and the lack of a capable guardian. Numerous interviewees spoke of how the mere presence of a SkyWatch tower deployed aides in the curtailment of criminal activity. Comments such as “makes law enforcement presence obvious” (PO#2, white, male, major), and the “goal is to have presence” (Civilian#8, white male, camera system administrator), highlight the participants views on one of the main objectives of deploying a SkyWatch tower. The presence of a tower makes it a capable guardian that when lacking, according to routine activities theory, results in a criminal act

occurring. While there may be an offender that is motivated to act upon a vulnerable target, having a tower deployed provides at least the pretense of a law enforcement presence that makes it a successful crime prevention tool according to those interviewed.

Two policing practices that were not originally incorporated into the study as a lens through which to understand the utilization and deployment of SkyWatch towers, but were voiced by participants as relevant, are situational crime prevention and hot spots policing. Situational crime prevention comprises opportunity-reducing measures that are meant to interfere with the offender's efforts by making them more difficult, riskier, and less rewarding (Felson & Eckert, 2016). While in hot spots policing police resources, normally patrols, are directed to places with high rates of crime under the principle that increased police presence in these locations will have a crime reduction effect (Braga et al., 2012).

As one interviewee noted, "SkyWatch towers are deployed to prevent crime by design" (PO#11, white, male, deputy chief). Therefore, situational crime prevention will be discussed first, as well as its relevance for future research regarding SkyWatch towers through this policing strategy. In situational crime prevention (SCP) Clarke (1983; 1995; 1997), a perspective stemming from the analysis of conditions that give rise to certain types of offenses, there is a focus on the settings for crime. SCP is not meant to detect crime or punish offenders, rather it aims to deter crime by subtly altering surroundings to make criminal acts less appealing (Clarke, 1997). Products or services offered by hospitals, schools, shopping malls, bars, or even parking lots can offer opportunities for a wide variety of crimes to occur (Clarke, 1997). SCP directs the responsibility of crime prevention to these public and private entities, rather than the police, arguing they are better suited to make managerial and environmental changes that can

reduce crime (Freilich & Newman, 2017). See appendix A for an elaborated discussion of situational crime prevention and its applicability for future SkyWatch tower research.

The second policing practice that emerged from the interviews, and also presents itself as another avenue for future research, was hot spots policing in relation to SkyWatch towers. For instance, when asked about a tower's deployment one participant responded, "a tower is deployed to specific areas where there has been an increase in crime" (Civilian#12, white, female, police service volunteer coordinator). As previously noted, an invaluable component to the deterrence theory is certainty of apprehension. Without certainty one cannot proceed to those steps of celerity and severity. Accordingly, the most significant players affecting certainty is police, as without detection and apprehension there is no conviction or punishment (Nagin, 2013). An example of such effectiveness in deterrence can be seen with "hot spots" policing. According to Lum and colleagues (2011) this form of policing intervention is more likely to reduce crime and disorder as it is "proactive, focused, [and] place-based" (p. 20). Weisburd and colleagues (2004) demonstrated that crime trends are not influenced equally across a city, but rather the result of fluctuating crime trajectories in "micro places" (p. 284). Similarly, in a study by Sherman and colleagues (1989), it was found that 50% of calls to police came from three percent of addresses and intersections. Here policing deployment strategies were altered to concentrate police presence in these crime hot spots. Braga and Bond (2008) provided evidence that supported a significant reduction of crime with this "hot-spots" policing. With the strong police presence, it can be argued that a possible offender made the decision to not offend as the prospect of apprehension (cost) was so high.

This focus on reducing crime through environmental alterations turns one's attention to settings for crime rather than those who are offending (Clarke, 1997). Brantingham and

colleagues (2017) note how the environment that surrounds us not only shapes our everyday lives, but also crime, as it either restricts our movements or presents us with opportunities. Law enforcement's deployment of SkyWatch for use of its surveillance capabilities as a deterrent mechanism fit within this framework of situational crime prevention, specifically formal surveillance, and the principles of hot spots policing. The uniqueness of SkyWatch is that the surveillance becomes a hybrid of technological assistance coupled with individual officers' ability to identify criminal activity. As structures and features of a location can make an area more or less opportune for criminal activity (Eck, 1995) a focused strategy of hot spots policing utilizing the surveillance capabilities of SkyWatch has been recognized by law enforcement agencies.

According to Scott and Goldstein (2005) to properly maintain public safety and conduct effective policing procedures a relationship based on mutual trust between law enforcement personnel and the communities they serve is required. The perception of the interviewees was that a SkyWatch tower is not only welcomed by citizens, but also improves and fosters friendships between them and the community members. While public estrangement resulting from privacy concerns needs to be recognized, so do the benefits that seem possible based on participants' statements of community members' support. Citizens feeling a sense of safety with a tower's deployment, coupled with other community-oriented endeavors, could lead to increased police legitimacy which needs further consideration and assessment.

Although the issue of displacement was not mentioned by participants the potential for such makes it a relevant point to mention. To explain further displacement occurs when the original targets of a crime prevention intervention shift their offending to another location outside the area of focus (Reppetto, 1976). A study by Weisburd and colleagues (2006) found

that “when the immediate spatial displacement has been examined, the findings generally support the position that displacement is small, and that diffusion of crime control benefits is more likely” (p. 582). Results of a study by Weisburd and Green (1995) further support the tenet that a more focused approach to crime by police can be more effective and that displacement of crime to surrounding locations does not necessarily happen. As indicated crime displacement does not seem to be a significant consequence of police prevention strategies, particularly in hotspot scenarios. Therefore, it can be hypothesized that SkyWatch would also offer no negative repercussions in terms of the displacement of crime to nearby non-SkyWatch neighborhoods, however further analysis would be necessary.

Conclusions: Qualitative

SkyWatch surveillance towers appear to be a transportable, contemporary form of Bentham’s panopticon. Law enforcement personnel that deploy and utilize the towers opine that they function as an all-seeing eye in the sky that aims to moderate individuals’ behavior with their high visibility of police presence and 360-degree gaze from within. Of those law enforcement personnel that were interviewed, the majority of interviewees all expressed how SkyWatch can create a level of uncertainty in individuals, as to whether they are being observed or not, thereby causing them to modify their actions. Furthermore, the deployment of a tower was seen to provide a large, visible police presence, that ensured security and safety for citizens in an area or at an event. SkyWatch was also noted to offer law enforcement agents many policing advantages in the form of crowd control and management. Additionally, when utilizing the tower interviewees felt they contributed to community safety as it allowed people to enjoy their lives without a constant worry of potential danger or harm.

Although only anecdotal reports, the vast majority of interviewees noted that the deterrence of crime was achieved with the deployment of a tower. The tower was seen as a huge, visible deterrent apparatus, that had not only aided in the apprehension of criminals after incidents, but also prevented events from occurring in the first place. While its deterrent capabilities can be viewed as an important advantage of a SkyWatch tower deployment one must also consider the affect it has within the community. Both private citizens and property managers alike were reported to appreciate and value the tower. Little in the way of negative feedback was mentioned by interviewees. Furthermore, even though an officer cannot engage directly with citizens from within a tower, policing from a distance in affect, most participants' perceptions were that law enforcement and community relations were improved with SkyWatch deployment. The underlying construct that emerged from this study was that the tinted windows of the SkyWatch tower, raised almost 30 feet in the air, become more than mere pieces of glass. These windows and the tower they are part of aid in directing and protecting the movements of our everyday lives.

As noted earlier 86% of those interviewed held a personal belief that a SkyWatch tower deters crime in the area surrounding a deployment location. As the overarching aim of this study was to evaluate the deterrent effect of SkyWatch surveillance towers it was important to go beyond these anecdotal viewpoints. This theme of effectiveness in deterring crime informed the following quantitative phase as it is important for law enforcement agencies to know empirically whether the towers can be utilized as a crime prevention strategy. Therefore, the following quantitative phase of the study was meant to empirically and objectively test if this goal was achieved by looking at the available data.

CHAPTER SEVEN: QUANTITATIVE RESULTS

As this study had an exploratory sequential mixed methods design, the purpose was to build upon the findings from the initial phase. The developing theory arose from the qualitative methods, which then lead to and informed the quantitative phase. This sequential triangulation, notated as “QUAL → quan” (Morse, 1991, p. 121), indicates that the emphasis is placed on the qualitative data, which then builds to the quantitative data, which while not less valuable, was prioritized to a lesser extent. This chapter presents the quantitative analysis results, as well as a discussion of same.

Results (Quantitative)

In order to evaluate the effectiveness of SkyWatch towers, effectiveness being defined as whether there is a reduction in the calls for service (CFS), several statistical analyses were conducted. Using the calls for service data collected from five law enforcement agencies across the United States, the effect of SkyWatch towers as a crime prevention strategy was examined. An overview of the data from each jurisdiction is presented in Table 9, with a summary of the results from the descriptive and bivariate analysis conducted thereafter.

Table 9

Overview of Data by Jurisdiction

City/State	# Deployment Locations	Radius of Calls for Service	Sites	Number of Days Before Tower Deployment	Number of Days of Tower Deployment	Number of Days After Tower Deployment
Aventura, Florida	3	Entire District	#1	10	17	10
			#2	7	19	6
			#3	7	19	7

Table 9 Continued*Overview of Data by Jurisdiction*

City/State	# Deployment Locations	Radius of Calls for Service	Sites	Number of Days Before Tower Deployment	Number of Days of Tower Deployment	Number of Days After Tower Deployment
Montgomery, Alabama	6	1-mile	#1	15	25	14
			#2	7	4	7
			#3	7	13	11
			#4	7	5	7
			#5	7	3	7
			#6	14	11	14
Bedford, Texas	3	$\frac{3}{4}$ -mile to 1 $\frac{1}{2}$ - miles	#1	14	6	16
			#2	23	16	22
			#3	18	8	19
Garland, Texas	7	Entire District	#1	19	21	19
			#2	13	22	14
			#3	13	47	13
			#4	14	16	14
			#5	11	16	13
			#6	14	18	15
			#7	11	4	5

Table 9 Continued*Overview of Data by Jurisdiction*

City/State	# Deployment Locations	Radius of Calls for Service	Sites	Number of Days Before Tower Deployment	Number of Days of Tower Deployment	Number of Days After Tower Deployment
Charlotte- Mecklenburg, North Carolina	4	¼ -mile	#1	14	48	13
			#2	17	37	17
			#3	13	35	14
			#4	14	34	15

Upon requesting the calls for service data from those agencies that agreed to participate, the researcher learned that each request for data had to be individualized. Each agency had their own computer-aided dispatch (CAD) system and search capability perimeters. For instance, Garland Police Department and Aventura Police Department could not distinguish calls for service in any measured distance from a deployed SkyWatch tower. Instead, the data provided was for all calls for service from the district wherein a tower was deployed. The remaining three departments had some capability of focusing the calls for service within a certain radius of a deployed tower, but it varied from ¼ of a mile minimum to a maximum of 1 ½ miles.

Additionally, the original analysis plan had called for a comparison between calls for service from two weeks before and two weeks after tower deployment versus calls for service from during the actual tower deployment phase. After a review of the data received however, it was determined that each jurisdiction had more of a variation in the number of days for which the data was provided. For instance, the Aventura, Florida and Montgomery, Alabama datasets had calls for service for one week prior to a tower deployment and one week after a tower

deployment. Other jurisdictions, such as Garland, Texas, had one deployment location with data from almost three weeks pre- and post-tower deployment. As the number of days before a tower was deployed were balanced with an almost identical number of days after a tower was deployed the data was not reduced to the two-week only analysis originally planned. This was also beneficial in that more calls for service, thus more data points, were able to be incorporated with the additional days added.

Once the data was compiled for each jurisdiction, the researcher created a pivot table for calls of service by day for each jurisdiction. Pivot tables were also created for the other dependent variables as the following: crimes against person by day, crimes against property by day, theft *of* motor vehicle by day, and theft *from* motor vehicle by day. Additionally, pivot tables of calls for service at the deployment locations of a tower within each jurisdiction were generated.

Descriptive Statistics

Upon completion of the pivot tables all sites in the aggregate were combined and descriptive statistics were generated. As this study utilized daily calls for service as a proxy for crime, which has been well established in prior literature as discussed earlier, the analysis of such was predicated on the available data. Specifically, the only reasonable measure to assess a difference in the daily calls for service was the mean, as the number of days a tower was not deployed compared to the number of days a tower was deployed, were not equal.

The descriptive statistics of the data from across locations from several states combined is presented in Table 10 below. These included the summary of calls for service by day, calls for service relating to crimes against person by day, calls for service relating to crimes against

property by day, calls for service relating to theft *of* motor vehicle, and calls for service relating to theft *from* motor vehicle from when a tower was deployed versus when one was not.

Next, descriptive statistics for each site were produced for the same variables but at the individual jurisdictional level, to compare when a tower was deployed to when was not. Lastly, descriptive statistics for calls for service per day within each jurisdiction's separate deployment locations were compiled. In these analyses, the comparisons being made were for during a pre-tower deployment period, during tower deployment period, and during a post-tower deployment period. Tables 11 through 20 illustrate the descriptive statistics for each jurisdiction separately. A discussion of the information presented follows each of the corresponding table.

Table 10

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service, Overall & by Crime Type (Data Across Locations from Several States are Combined)

Variable	Tower Not Deployed (581 Days)					Tower Deployed (444 Days)				
	N	Min	Max	Mean	S.D.	N	Min	Max	Mean	S.D.
Calls for Service	810	0	14	1.39	1.59	564	0	8	1.27	1.48
Crimes Against Person	172	0	4	0.30	0.63	124	0	4	0.28	0.60
Crimes Against Property	638	0	14	1.10	1.36	440	0	8	0.99	1.22
Theft <i>of</i> Motor Vehicles	40	0	7	0.07	3.91	14	0	5	0.03	0.21
Theft <i>from</i> Motor Vehicles	96	0	7	0.17	0.58	68	0	5	0.15	0.48

All States

As the law enforcement agencies that provided the jurisdictional data requested the precise locations of the deployed SkyWatch towers not to be shared, I will offer generalities for where the 23 deployment sites analyzed in this study were located. In Montgomery, Alabama, five of the deployment locations were in parking lots of city parks and recreation areas. The sixth deployment location was in a parking lot at a mall. In Aventura, Florida, the deployment sites consisted of a parking lot for a Publix grocery store, a parking lot of a Best Buy, and a parking lot of an Olive Garden restaurant. In Charlotte-Mecklenburg, North Carolina, a tower was deployed in the parking lots of four separate local businesses. Bedford, Texas had a tower deployed in the parking lot of a Buffalo Wild Wings restaurant, the parking lot of a shopping mall, and a Wal-Mart parking lot. In Garland, Texas the seven tower deployment sites were parking lots of separate local businesses.

The sample consisted of 1,374 calls for service between all jurisdictions and deployment locations. There were 296 (21.5%) calls for service relating to crimes against person and 1078 (78.0%) calls for service relating to property crimes. The calls for service ranged from aggravated assault, simple assault, and intimidation to burglary, vandalism of property, and motor vehicle theft. The most common type of call for service relating to crimes against person was simple assault (67, 22.6%). Other common types of calls for service for crimes against person were intimidation (57, 19.2%), assault (26, 8.8%), threat (23, 7.7%), and harassment (22, 7.4%). The most common type of call for service relating to crimes against property was theft (228, 21.2%). Other common types of calls for service for property crimes were shoplifting (194, 18.0 %), theft *from* motor vehicle (164, 15.0%), and destruction/vandalism of property (55, 5.1%).

Overview of All States

Examining the overall aggregated effect of the SkyWatch towers, with no tower deployed versus having a tower deployed, an overall positive effect is revealed. Specifically, findings presented in Table 10, above, demonstrate that the average calls for service per day declined by about 9%, from 1.39 to 1.27 calls, which is a promising decline. Additionally, findings presented in Table 10, suggest a notable decrease in the average calls for service per day relating to all crimes analyzed during the deployment of a SkyWatch tower. Specifically, a decline of about 7% was observed in regard to crimes against property; a decline of 57% was observed for motor vehicle thefts, and a 12% decline of thefts *from* motor vehicles was also observed.

Calls for Service

As indicated in Table 10, a SkyWatch tower was not deployed for a total of 581 days within the aggregate of all the sites. A tower was deployed for 444 days within the aggregate of all the sites. There were 810 calls for service during the 581 days when a tower was not deployed and 564 during the 444 days when a tower was deployed. A minimum of zero calls for service per day occurred when a tower was both deployed and not deployed. When a tower was not deployed, there was a maximum of 14 daily calls per service, while on days when a tower was deployed there was a maximum of eight daily calls for service. The average for daily calls for service was slightly lower ($M = 1.27$, $SD = 1.48$) when a tower was deployed versus when it was not ($M = 1.39$, $SD = 1.59$).

Crimes Against Person

For the sites as an aggregate there were 172 calls for service relating to crimes against person during the 581 days when a tower was not deployed and 124 during the 444 days when a tower was deployed. While there was a decrease in the number of calls for service per day for

crimes against person when a tower was deployed, the daily average of 0.28 ($SD = 0.60$) was just barely lower than the daily average when a tower was not deployed, 0.30 ($SD = 0.63$). Both when a tower was deployed and when it was not, there was a minimum of zero calls for service per day for a crime against person and a maximum of four calls.

Crimes Against Property

There were 638 calls for service relating to crimes against property during the 581 days when a tower was not deployed as compared to 440 during the 444 days when one was. Again, these totals are an aggregate for all of the sites. When a tower was deployed, the average of the calls for service for crimes against property was 1.10 ($SD = 1.22$). This is compared to an average of 0.99 ($SD = 1.36$) for crimes against property calls when a tower was not deployed. There were days when a tower was deployed, as well as when was not, that there were zero calls for service. However, when a tower was not deployed a maximum of 14 calls for service per day for crimes against property were noted versus eight calls when a tower was deployed.

Theft of Motor Vehicle

As noted earlier, the dearth of empirical literature on the effectiveness of SkyWatch towers lead the researcher to draw parallels with prior research of CCTV cameras as another form of a surveillance-based crime prevention strategy. Within this literature theft *of* motor vehicles (Caplan et al., 2011) and theft *from* motor vehicles (Poyner, 1991) were noted to be the most impacted forms of property crimes when analyzing the effectiveness of CCTV systems. As such property crimes in their totality were included as a variable of interest, but specifically theft *of* motor vehicle and theft *from* motor vehicle were broken out for individual analysis.

In a combination of all the sites, there were 40 calls for service for theft *of* motor vehicle during the 581 days when a tower was not deployed and 14 during the 444 days when a tower

was deployed. The average of those calls for service relating to theft *of* motor vehicle when a tower was deployed was 0.07 ($SD = 0.21$), compared to an average of 0.03 ($SD = 3.91$) for calls for service per day when a tower was not deployed. It should be noted here that the distribution for calls for service was skewed, in that there were just a few days when there were a lot of calls for service for theft *of* motor vehicle while most days there were zero. This imbalance however was only noted to occur during the period when a tower was not deployed. There were days, both when a tower was deployed and when was not, that the minimum number of calls for service for theft *of* motor vehicle was zero. The maximum daily calls for service were seven when a tower was not deployed and five when one was.

Theft from Motor Vehicle

As discussed above, the second specific form of property crime often evaluated in the effectiveness of crime prevention through a policing surveillance strategy is theft *from* motor vehicle (Armitage, 2002; Caplan et. al., 2011; Poyner, 1991). Within this analysis of all the jurisdictions combined, there were 96 calls for service relating to theft *from* motor vehicle during the 581 days when a tower was not deployed and 68 during the 444 days when a tower was deployed. The average of the calls for service when a tower was not deployed was 0.17 ($SD = 0.58$). This is in comparison to the calls for service for a deployed tower which had an average of 0.15 ($SD = 0.48$). The minimum number of calls for service was zero for when a tower was deployed and when it was not. The maximum number of calls for service per day for theft *from* motor vehicle was seven without a tower deployed and five with one deployed.

Table 11

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Montgomery, Alabama

Variable	Tower Not Deployed (117 Days)					Tower Deployed (61 Days)				
	N	Min	Max	Mean	S.D.	N	Min	Max	Mean	S.D.
Alabama (Montgomery)										
Calls for Service	261	0	8	2.23	1.78	154	0	8	2.52	1.65
Crimes Against Person	79	0	3	0.68	0.86	45	0	4	0.74	0.95
Crimes Against Property	182	0	6	1.56	1.36	109	0	5	1.79	1.43
Theft <i>of</i> Motor Vehicle	20	0	2	0.17	0.46	4	0	3	0.07	0.25
Theft <i>from</i> Motor Vehicle	38	0	3	0.32	0.65	24	0	3	0.39	0.76

Montgomery, Alabama

Overview of Montgomery, Alabama

In analyzing the overall effect of a SkyWatch tower being deployed as compared to when one is not in Montgomery, Alabama mixed results were found. For example, the findings presented in Table 11, above, demonstrate that the overall average daily calls for service increased by about 13%, from 2.23% to 2.52% calls, which is counter to what was predicted. This increase in the daily calls for service average was also found when the calls for service were relating to the certain types of crimes included. Specifically, an increase of about 9% was observed in regard to crimes against person; an increase of 15% was observed for crimes against property, and a 22% increase in thefts *from* motor vehicle thefts was noted. The only decline in the average daily calls for service was relating to theft *of* motor vehicle where a 59% decreased was observed. This finding will be discussed in more detail in the proceeding chapter; however, it should be noted here that research on the utilization of CCTV systems had similar findings. The increase in the average calls for service relating to crimes against person, crimes against property, and theft *from* motor vehicle were counter to the expected effect. This can be explained by the possibility that a tower incentives people to call the police. Potentially those being victimized are more inclined to report the incident as a tower being present may indicate to some an authority and place of assistance for those in need.

Calls for Service

As indicated in Table 11 for Montgomery, Alabama a tower was not deployed for 117 days. A tower was deployed for 61 days. There were 261 calls for service when a tower was not deployed and 154 when a tower was deployed. The number of calls for service per day for when a tower was deployed had an average of 2.52 ($SD = 1.65$) while when a tower was not deployed

the calls for service average was lower at 2.23 ($SD = 1.78$). Both when a tower was deployed and when was not there was a minimum of zero calls for service per day and a maximum of eight calls.

Crimes Against Person

Within this analysis of Montgomery, Alabama there were 79 calls for service relating to crimes against person during the 117 days when a tower was not deployed. There were 45 calls for service for crimes against person during the 61 days when a tower was deployed. The average of the calls for service when a tower was not deployed was 0.68 ($SD = 0.86$). This is in comparison to a deployed tower calls for service with a higher average of 0.74 ($SD = 0.95$). The minimum number of calls for service was zero for when a tower was deployed and when it was not. The maximum number of calls for service per day for crimes against person was three without a tower deployed and four with one deployed.

Crimes Against Property

Montgomery, Alabama had 182 calls for service relating to crimes against property during the 117 days when a tower was not deployed and 109 during the 61 days when a tower was deployed. The average of those calls for service relating to crimes against property when a tower was deployed was 1.79 ($SD = 1.43$), compared to an average of 1.56 ($SD = 1.36$) for calls for service per day when a tower was not deployed. There were days, both when a tower was deployed and when was not, that there were no calls for crimes against property. The maximum calls for service were six when a tower was not deployed and five when one was.

Theft of Motor Vehicle

There were 20 calls for service relating to theft of motor vehicle during the 117 days when a tower was not deployed and four during the 61 days when a tower was deployed in

Montgomery, Alabama. The average of the calls for service when a tower was not deployed was 0.17 ($SD = 0.46$). This is in comparison to a deployed tower calls for service average of 0.07 ($SD = 0.25$). The minimum number of calls for service was zero for when a tower was deployed and when it was not. The maximum number of calls for service per day for theft *of* motor vehicle was three with and without a tower deployed.

Theft from Motor Vehicle

In Montgomery, Alabama there were 38 calls for service for theft *from* motor vehicle during the 117 days when a tower was not deployed as compared to 24 during the 61 days when a tower was deployed. When a tower was deployed the average calls for service relating to theft *from* motor vehicle was 0.39 ($SD = 0.76$). This is compared to an average of 0.32 ($SD = 0.65$) for theft *from* motor vehicle calls when a tower was not deployed. There were days when a tower was deployed, as well as when was not, that there were zero calls for service at a minimum and three at a maximum.

Table 12

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service by Individual Deployment Locations in Montgomery, Alabama

Variable	Pre-Deployment					Deployment					Post-Deployment				
	N	Min	Max	Mean	S.D.	N	Min.	Max.	Mean	S.D.	N	Min.	Max.	Mean	S.D.
Alabama (Montgomery)															
Site #1															
Calls for Service	46	0	6	3.07	1.34	84	1	8	3.36	1.60	52	2	7	3.71	1.54
Site #2															
Calls for Service	23	1	7	3.29	2.14	16	1	7	4.00	2.45	20	1	4	2.86	1.22
Site #3															
Calls for Service	10	0	3	1.43	1.27	10	0	3	0.77	1.01	18	0	3	1.64	1.03
Site #4															
Calls for Service	14	0	4	2.00	1.41	57	0	3	1.40	1.34	13	0	4	1.86	1.35
Site #5															
Calls for Service	2	0	1	0.29	0.49	4	0	2	1.33	1.16	16	1	4	2.29	1.11

Table 12 Continued

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service by Individual Deployment Locations in Montgomery, Alabama

Variable	Pre-Deployment					Deployment					Post-Deployment				
	N	Min	Max	Mean	S.D.	N	Min.	Max.	Mean	S.D.	N	Min.	Max.	Mean	S.D.
Alabama (Montgomery)															
Site #6															
Calls for Service	45	0	8	3.21	2.12	33	1	5	3.00	1.55	2	0	2	0.14	5.35

Individual Deployment Locations- Calls for Service

For Montgomery, Alabama there were six individual deployment locations. As demonstrated in Figure 4 through Figure 9 below there were several fluctuations in the average number of calls for service by site during the pre-, during, and post- phases. For instance, Site #2 had an increase in the average calls for service during tower deployment versus the pre-deployment phase. However, during post-deployment the average dropped, whereas it has risen at Site #1.

Sites #3 and Site #6 showed a decrease in the average calls for service when a tower was deployed. However, Site #3 showed an increase in the calls for service average post-deployment, while Site #6 had a decrease in the average calls for service from both pre- and during deployment. It should be noted here that there calls for service at Site #6 went from 45 pre-deployment to 33 during deployment and then down to two during the post-deployment period. A discussion of potential reasons for this will be provided in the next chapter.

Site #4 had a decrease in the average number of calls for service pre-deployment as compared to during deployment, while Site #5 had an increase from pre-deployment to during deployment. Site #4 also had an increase in the average number of calls for service post-deployment, however this was still lower than the pre-deployment average while Site #5 had an average for post-deployment calls for service that increased.

Figure 4

Daily Calls for Service, Site #1 Montgomery, Alabama

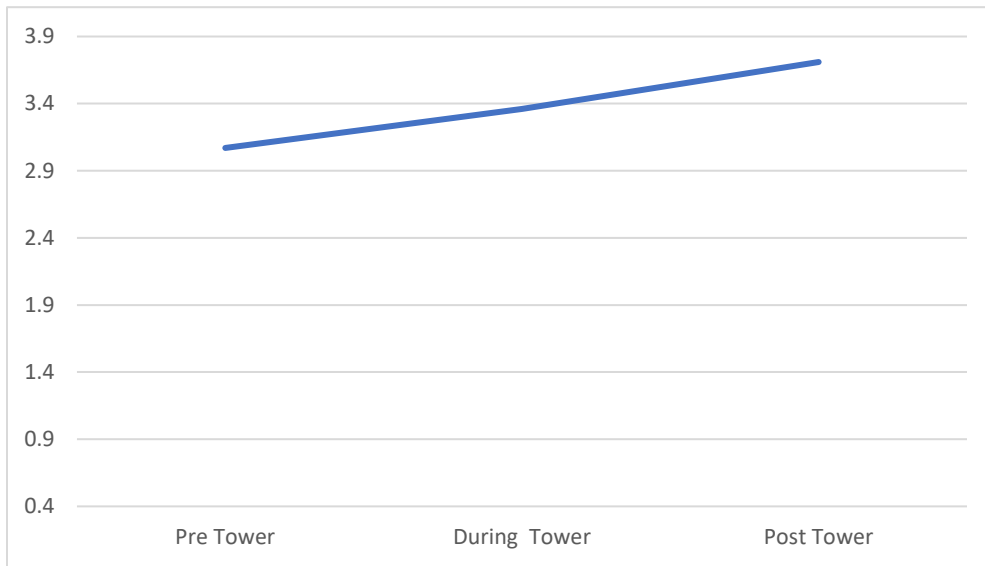


Figure 5

Daily Calls for Service, Site #2 Montgomery Alabama

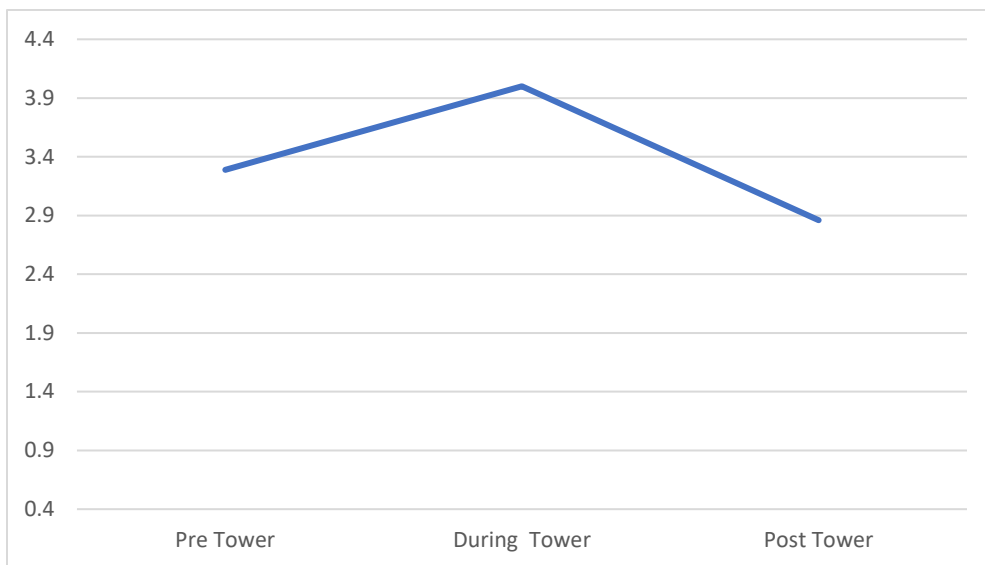


Figure 6

Daily Calls for Service, Site #3, Montgomery, Alabama

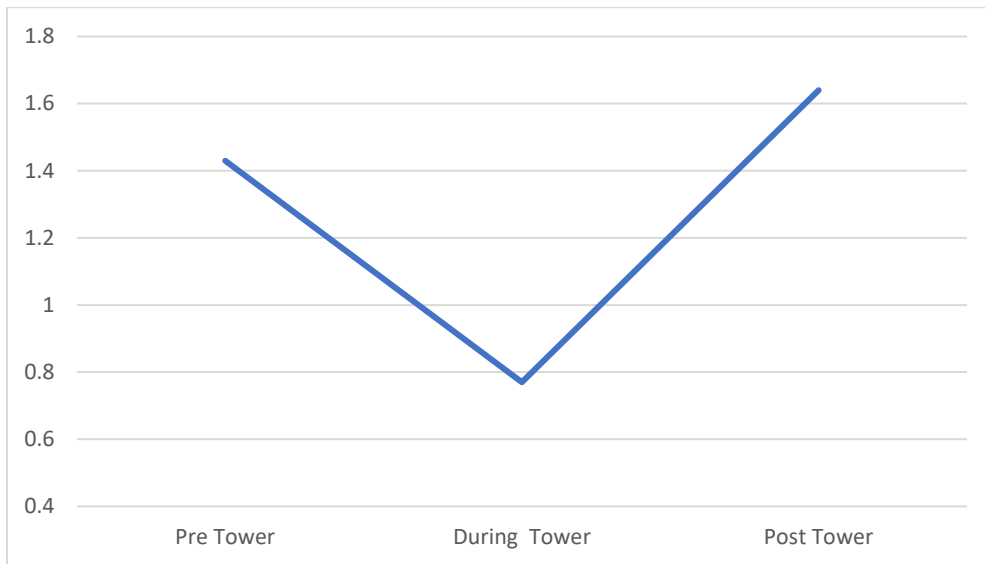


Figure 7

Daily Calls for Service, Site #4 Montgomery, Alabama

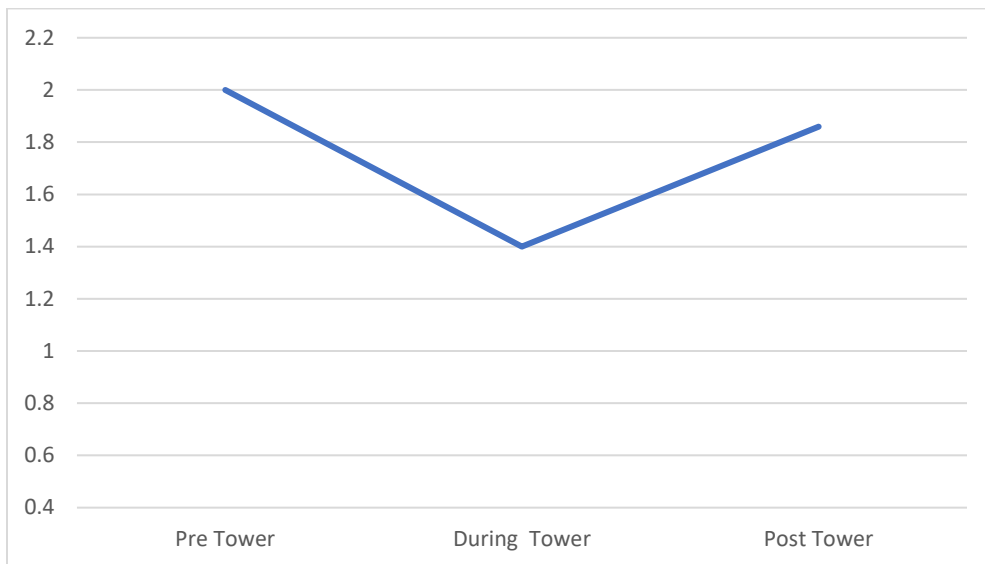


Figure 8

Daily Calls for Service, Site #5 Montgomery, Alabama

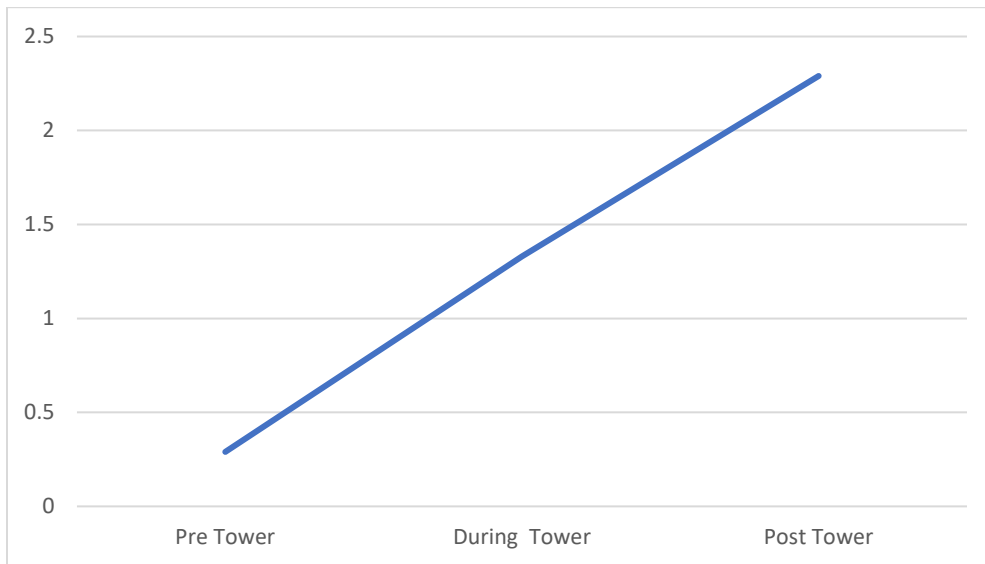


Figure 9

Daily Calls for Service, Site #6 Montgomery, Alabama

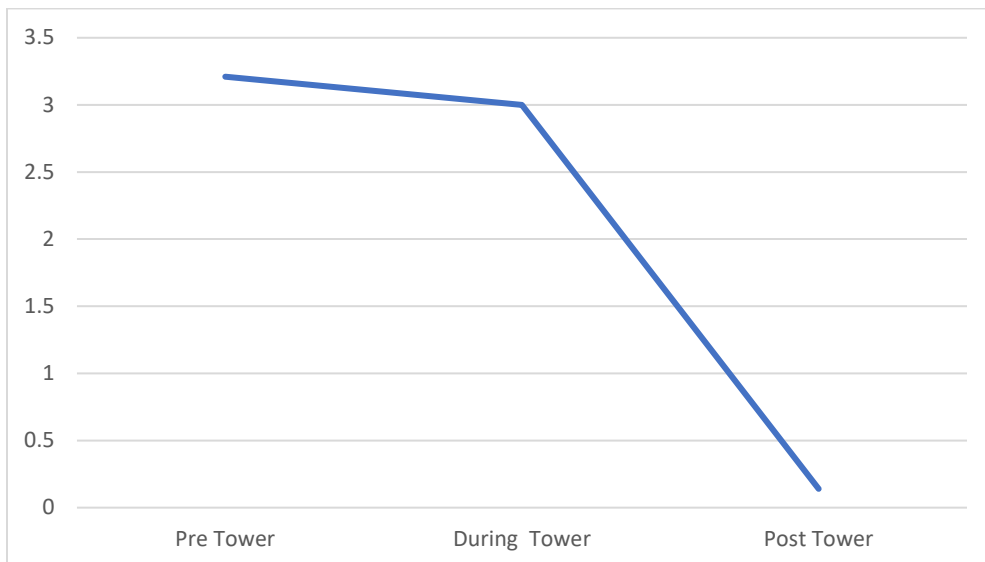


Table 13

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Aventura, Florida

Variable	Tower Not Deployed (47 Days)					Tower Deployed (55 Days)				
	N	Min	Max	Mean	S.D.	N	Min	Max	Mean	S.D.
Florida (Aventura)										
Calls for Service	94	0	6	2.00	1.50	102	0	5	1.85	1.34
Crimes Against Person	14	0	3	0.30	0.62	19	0	3	0.35	0.70
Crimes Against Property	80	0	5	1.70	1.17	83	0	4	1.51	0.87
Theft <i>of</i> Motor Vehicle	3	0	1	0.06	0.25	2	0	1	0.04	0.19
Theft <i>from</i> Motor Vehicle	6	0	3	0.13	0.49	12	0	1	0.22	0.42

Aventura, Florida

Overview Aventura, Florida

In examining the overall effect of a SkyWatch tower being deployed in Aventura, Florida as compared to when one is not there was a slightly more positive impact found. Specifically, the findings presented in Table 12, above, demonstrate that the overall average daily calls for service decreased by about 8%, from 2.00% to 1.85% calls, which is promising. Additionally, findings presented in Table 12, suggest a decrease in the average call for service per day relating to crimes against property and theft *of* motor vehicle during the deployment of a SkyWatch tower. Specifically, a decline of about 19% was observed in regard to crimes against property and a decline of 33% was observed for motor vehicle thefts. There was however an increase in the average daily calls for service relating to crimes against person, almost 17%, and in thefts *from* motor vehicle thefts, approximately 69%. As discussed earlier the increase in calls for service relating to crimes against person may be a factor of an increase in reporting due to the towers' presence. The notable increase in the average daily calls for service relating to theft *from* motor vehicle potentially could indicate that a deployed tower does not deter that type of crime. This finding will be discussed in more detail in the proceeding chapter; however, it should be noted here that CCTV research had similar findings when utilized in parking lots.

Calls for Service

As indicated in Table 13 there were 94 calls for service during the 47 days when a tower was not deployed as compared to 102 calls during the 55 days when one was deployed in Aventura, Florida. When a tower was not deployed the average calls for service was 2.00 ($SD = 1.50$). When a tower was deployed the calls for service average was 1.85 ($SD = 1.34$). There were days when a tower was deployed, as well as when was not, that there were zero calls for

service. When a tower was deployed five calls for service per day was the maximum while six calls for service per day was the maximum when a tower was not deployed.

Crimes Against Person

In Aventura, Florida there were 14 calls for service for crimes against person during the 47 days when a tower was not deployed. In comparison there were 19 calls for service relating to crimes against person during the 55 days when a tower was deployed. The average for those calls for service when a tower was deployed was 0.35 ($SD = 0.70$). When a tower was not deployed the crimes against person calls for service had an average of 0.30 ($SD = 0.62$). The minimum, zero, and maximum, three, number of calls of service per day for crimes against person was identical for when a tower was deployed versus when one was not.

Crimes Against Property

Within this analysis of Aventura, Florida there were 83 calls for service relating to crimes against property during the 55 days when a tower was deployed and 80 during the 47 days when a tower was not deployed. The average calls for service when a tower was not deployed was 1.70 ($SD = 1.17$). This is in comparison to a deployed tower calls for service with a lower average of 1.51 ($SD = 0.87$). There minimum number of calls for service was zero for when a tower was deployed and when it was not. The maximum number of calls for service per day for crimes against property was five without a tower deployed and four with one deployed.

Theft of Motor Vehicle

Calls for service relating to theft of motor vehicle was low in Aventura, Florida. There were three calls during the 47 days when a tower was not deployed and two during the 55 days when one was. The calls for service average when a tower was not deployed was 0.06 ($SD = 0.25$) and when a tower was deployed the calls for service average was 0.04 ($SD = 0.19$). The

minimum and maximum number of calls of service per day were identical with zero and one respectively.

Theft from Motor Vehicles

As with theft *of* motor vehicles in Aventura, Florida the calls for service for theft *from* motor vehicles was low. There were 12 calls for service during the 55 days when a tower was deployed and half of that, six, during the 47 days when a tower was not deployed. The calls for service average 0.22 ($SD = 0.42$), with tower deployment, was higher than the average without tower deployment, 0.13 ($SD = 0.49$). Calls for service relating to theft *from* vehicles per day had a minimum of zero for both a deployed and not deployed tower. When a tower was deployed the maximum calls for service per day was one while it was three when a tower was not deployed.

Table 14

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service by Individual Deployment Locations in Aventura, Florida

Variable	Pre-Deployment					Deployment					Post-Deployment				
	N	Min	Max	Mean	S.D.	N	Min.	Max.	Mean	S.D.	N	Min.	Max.	Mean	S.D.
Florida (Aventura)															
Site #1															
Calls for Service	17	0	4	1.60	1.08	33	0	5	1.88	1.36	10	0	4	1.40	1.35
Site #2															
Calls for Service	10	0	3	1.29	0.59	40	0	5	2.05	1.55	18	1	3	3.00	2.37
Site #3															
Calls for Service	17	0	5	2.43	1.72	31	0	4	1.63	1.12	20	2	4	2.86	0.90

Individual Deployment Locations- Calls for Service

For Aventura, Florida there were three individual deployment locations. As seen in Figure 10 through Figure 12 below there was a variance in the average calls for service by individual deployment location between the pre-deployment, during deployment, and post-deployment phases. For instance, Site #3 was the only site to demonstrate a decrease in the mean of calls for service when a tower was deployed, however, in the post-deployment period. Site #1 and Site #2 did not have a decrease in the average calls for service when a tower was deployed, although Site #1 did have a post-deployment average that was lower than the pre-deployment one.

Figure 10

Calls for Service, Site #1 Aventura, Florida

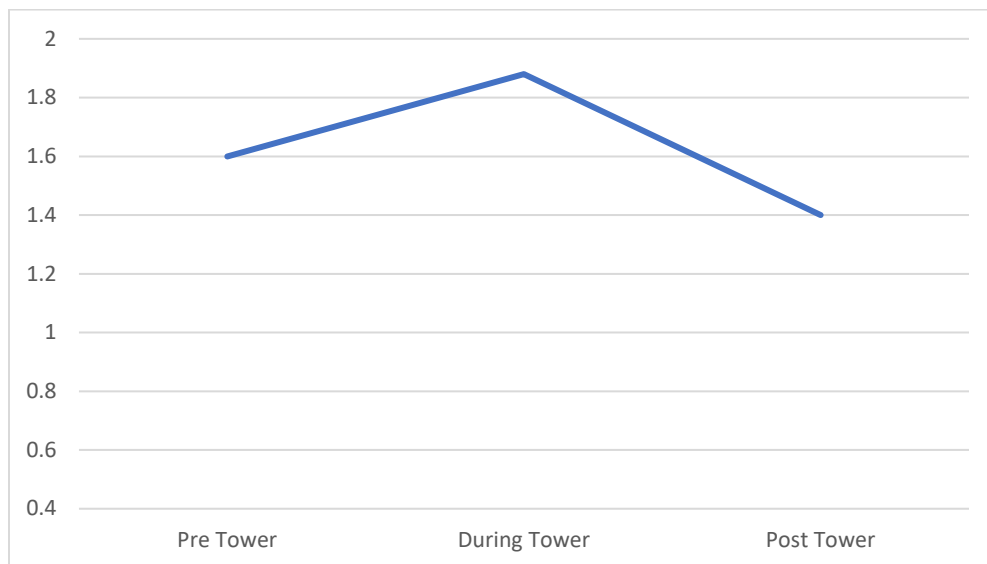


Figure 11

Calls for Service, Site #2 Aventura, Florida

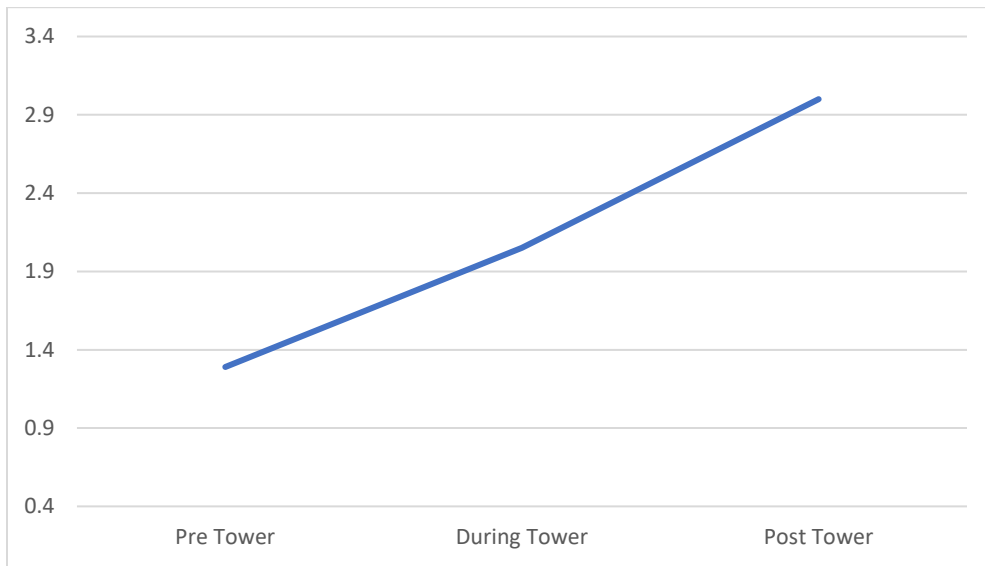


Figure 12

Calls for Service, Site #3 Aventura, Florida

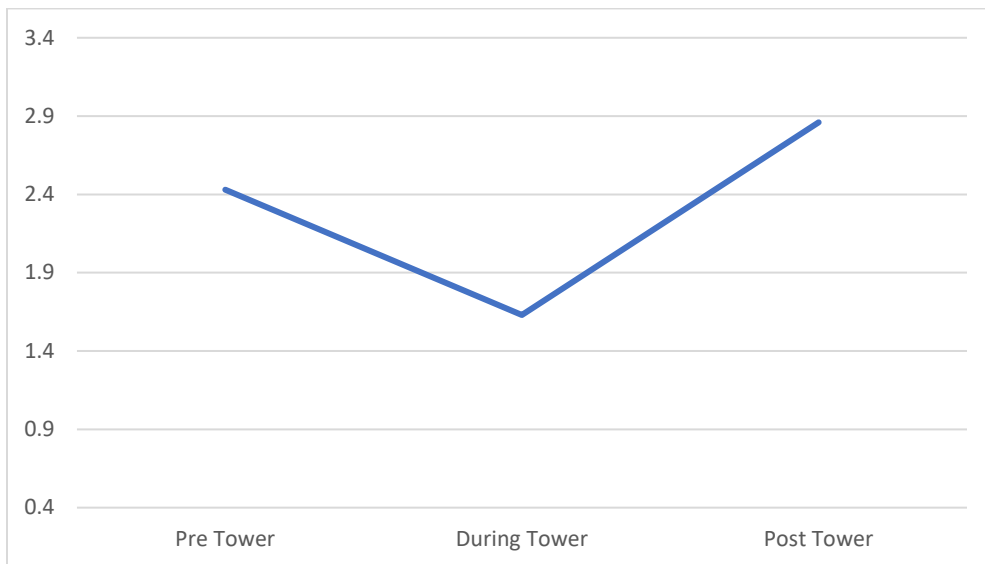


Table 15

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Charlotte-Mecklenburg, North Carolina

Variable	Tower Not Deployed (117 Days)					Tower Deployed (154 Days)				
	N	Min	Max	Mean	S.D.	N	Min	Max	Mean	S.D.
North Carolina (Charlotte-Mecklenburg)										
Calls for Service	78	0	4	0.67	0.56	104	0	5	0.68	0.64
Crimes Against Person	9	0	2	0.08	0.30	22	0	2	0.14	0.36
Crimes Against Property	69	0	4	0.59	0.85	82	0	5	0.53	0.85
Theft <i>of</i> Motor Vehicle	4	0	4	0.03	0.37	3	0	1	0.02	0.14
Theft <i>from</i> Motor Vehicle	7	0	1	0.06	0.24	12	0	2	0.08	0.29

Charlotte-Mecklenburg, North Carolina

Overview of Charlotte-Mecklenburg, North Carolina

In analyzing the overall effect of a SkyWatch tower being deployed as compared to when one is not in Charlotte-Mecklenburg, North Carolina the findings were again mixed. Specifically, the findings presented in Table 15, above, demonstrate that the overall average daily calls for service increased, but only slightly, about 1%, from 0.67% to 0.68% calls. While a decrease was expected there was no notable change. There were, however, increases in the daily calls for service average relating to crimes against person and thefts *from* motor vehicles. Specifically, an increase of 75% was observed for crimes against person, and about a 33% increase in thefts *from* motor vehicle thefts was also noted.

The remarkable increase seen in the average daily calls for service relating to crimes against person when a tower was deployed requires a more in-depth analysis than is possible with the available data. However, a potential factor could have been the timing of the deployment. If the deployment period was over a major holiday, when more express violence is noted to occur (Cohn & Rotton, 2003), calls for service relating to such crimes could increase. While not as striking as the increase observed in crimes against person, there was a noteworthy increase in the average daily calls for service relating to thefts *from* motor vehicles. As noted previously this could be the result of increased reporting due to a clear police presence which may incentivize those victimized to report the incident.

Opposite findings were observed in relation to crimes against property and theft *of* motor vehicle. Specifically, an approximate 10% decrease was noted in regard to the daily calls for service average relating to crimes against property when a tower was deployed, as well as a 33% decline in calls relating to motor vehicle thefts.

Calls for Service

As indicated in Table 15 Charlotte-Mecklenburg, North Carolina had a total of 182 calls for service. Of these 78 were during the 117 days when a tower was not deployed and the remaining 104 were during the 154 days a tower was deployed. The average calls for service during tower deployment was 0.68 ($SD = 0.64$). The average calls of service without a tower deployed was 0.67 ($SD = 0.56$). The minimum number of calls for service per day was zero for when a tower was deployed and when one was not. With a tower deployed the maximum number of calls for service was five. A tower not being deployed had a maximum of four calls for service per day.

Crimes Against Person

There were nine calls for service relating to crimes against person during the 117 days when a tower was not deployed as compared to 22 during the 154 days when one was in Charlotte-Mecklenburg, North Carolina. When a tower was not deployed the calls for service relating to crimes against person average was 0.08 ($SD = 0.30$). This was compared to an average of 0.14 ($SD = 0.36$) when a tower was deployed. There were days when a tower was deployed, as well as when was not, that there were zero calls for service. The maximum number of calls for service for crimes against person per day was the same for both deployed and not deployed at two.

Crimes Against Property

Calls for service for crimes against property when a tower was 82 during the 154 days when a tower was deployed versus 69 during the 117 days when a tower was not deployed. The average however of calls for service with a tower deployed was 0.53 ($SD = 0.85$) as compared to the higher average of 0.59 ($SD = 0.85$) for when a tower was not deployed. The minimum calls

for service relating to crimes against property are the same, zero, with both a deployed and not deployed tower. The maximum calls for service per day is slightly higher, five, when a tower is deployed than the four when a tower is not deployed.

Theft of Motor Vehicle

The number of calls for service relating to theft *of* motor vehicle are low for Charlotte-Mecklenburg, North Carolina. In the dataset there were only three calls during the 154 days when a tower was deployed and four during the 117 days when there was not a tower present. The calls for service average when a tower was not deployed, 0.03 ($SD = 0.37$), is only slightly higher than that of the average when a tower was deployed, 0.02 ($SD = 0.14$). The minimum number of calls of service per day, zero, was the same for both tower deployment and non-deployment. There was variation in the maximum number of calls for service per day as when a tower was not deployed there were four calls maximum versus one when a tower was deployed.

Theft from Motor Vehicle

A total of 19 calls for service for theft *from* motor vehicle was noted. Seven of these calls were during the 117 days when a tower was not deployed and the remaining 12 occurred during the 154 days a tower was deployed. The average calls of service per day relating to theft *from* motor vehicle when a tower was deployed was 0.08 ($SD = 0.29$). When a tower was not deployed the average calls for service per day was 0.06 ($SD = 0.24$). The minimum number of calls for service per day for theft *from* motor vehicle was zero for both when a tower was deployed and when one was not deployed. The maximum number of calls was one for when a tower was not deployed and two for when one was.

Table 16

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service by Individual Deployment Locations in Charlotte-Mecklenburg, North Carolina

Variable	Pre-Deployment					Deployment					Post-Deployment				
	N	Min	Max	Mean	S.D.	N	Min.	Max.	Mean	S.D.	N	Min.	Max.	Mean	S.D.
North Carolina (Charlotte-Mecklenburg)															
Site #1															
Calls for Service	13	0	2	0.64	0.84	6	0	3	0.40	0.68	9	0	1	0.38	0.51
Site #2															
Calls for Service	10	0	2	0.47	0.72	24	0	3	0.59	0.87	15	0	2	0.76	0.66
Site #3															
Calls for Service	9	0	3	0.46	0.88	25	0	5	1.06	1.31	9	0	2	0.50	0.65
Site #4															
Calls for Service	21	0	4	1.36	1.45	28	0	3	0.76	0.92	13	0	3	0.73	0.88

Individual Deployment Locations- Calls for Service

For Charlotte-Mecklenburg, North Carolina there were four individual deployment locations. As seen with the previous individual deployment locations for other jurisdictions there were differing variations with the calls for service average across the sites and phases. Site #1 and Site #4 both demonstrated a decrease in the mean for calls for service during tower deployment versus pre-deployment. Both sites also had average calls for service that decreased below the deployment phase average in during post-deployment.

In Site #2 the calls for service average during the pre-deployment phase increased during deployment and had additional increase in the post-deployment phase. Site #3 also had an increase in the average for calls for service per day during deployment from pre-deployment, however had a decrease post-deployment. These fluctuations can be seen in Figure 13 through Figure 16.

Figure 13

Calls for Service, Site #1 Charlotte-Mecklenburg, North Carolina

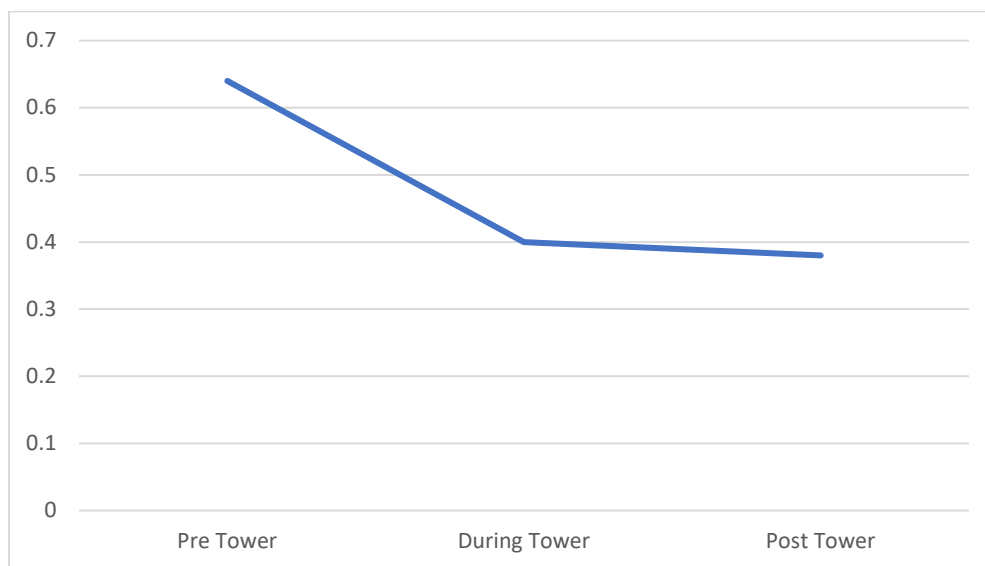


Figure 14

Calls for Service, Site #2 Charlotte-Mecklenburg, North Carolina

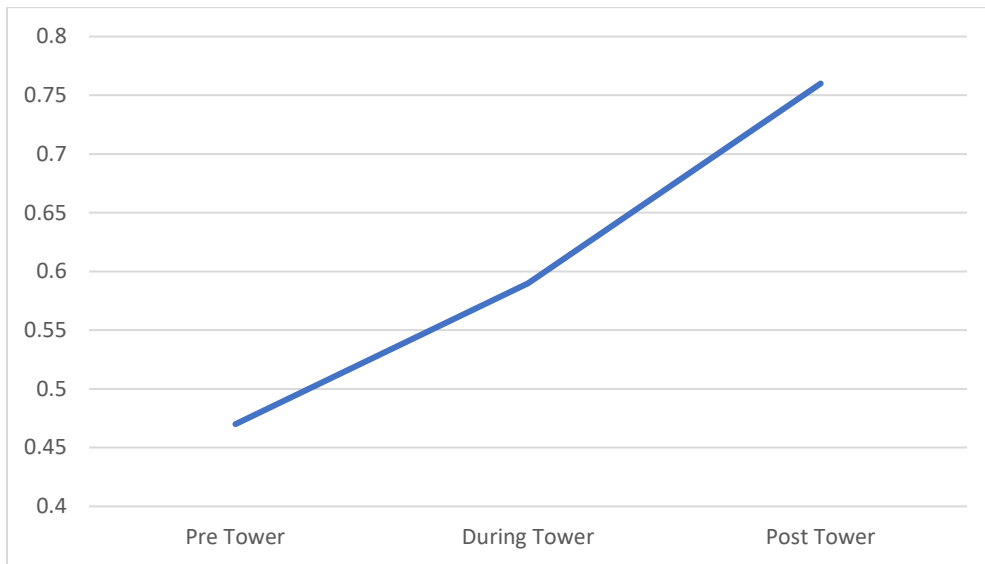


Figure 15

Calls for Service, Site #3 Charlotte-Mecklenburg, North Carolina

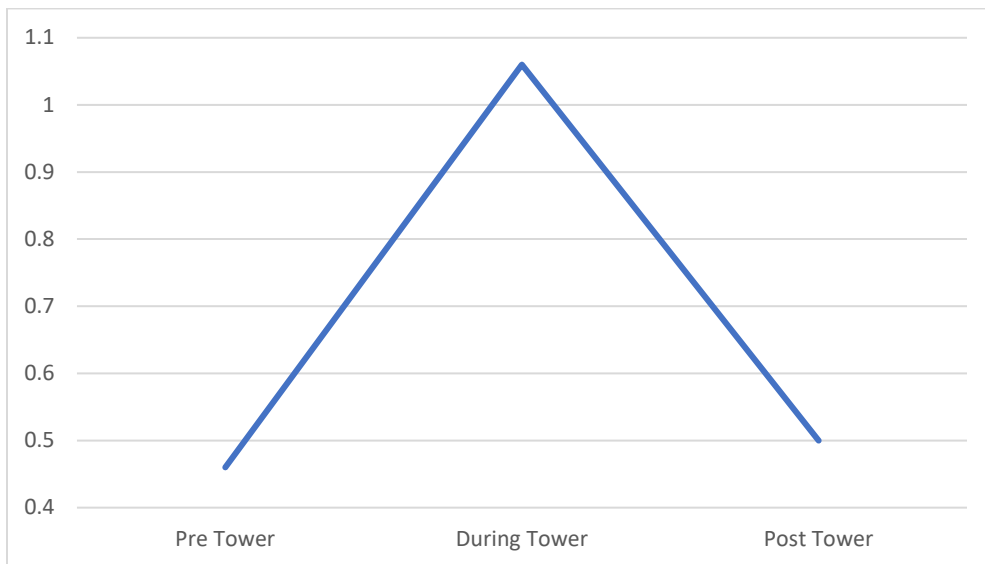


Figure 16

Calls for Service, Site #4 Charlotte-Mecklenburg, North Carolina

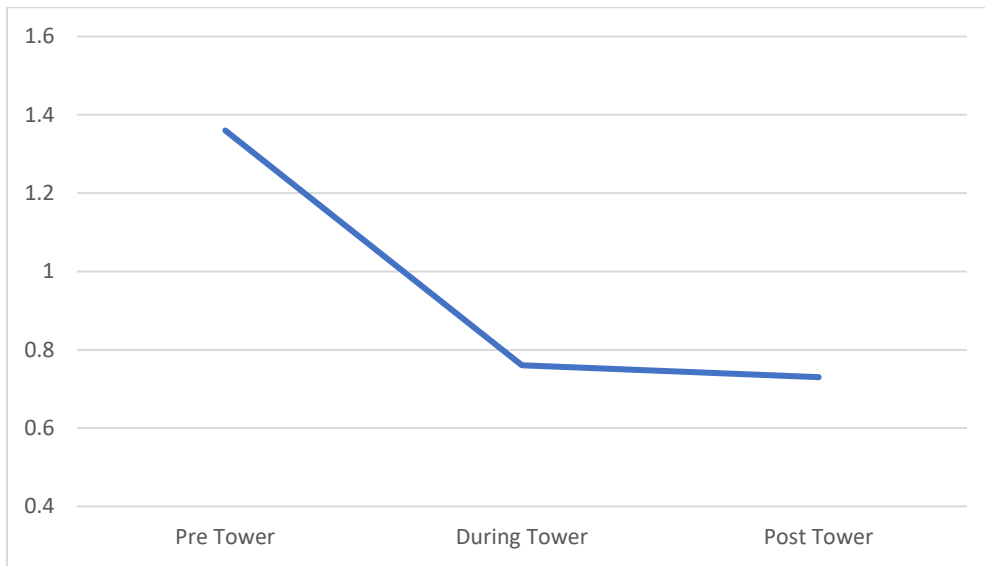


Table 17

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Bedford, Texas

Variable	Tower Not Deployed (112 Days)					Tower Deployed (30 Days)				
	N	Min	Max	Mean	S.D.	N	Min	Max	Mean	S.D.
Texas (Bedford)										
Calls for Service	196	0	7	1.75	1.39	63	0	8	2.10	1.66
Crimes Against Person	56	0	4	0.50	0.78	18	0	3	0.60	0.77
Crimes Against Property	140	0	7	1.25	1.22	45	0	8	1.50	1.53
Theft <i>of</i> Motor Vehicle	13	0	2	0.12	0.37	5	0	1	0.17	0.38
Theft <i>from</i> Motor Vehicle	22	0	7	0.20	0.78	9	0	5	0.30	0.99

Bedford, Texas

Overview of Bedford Texas

When examining the overall effect of a SkyWatch tower being deployed in Bedford, Texas as compared to when one is not, all the findings were counter to the expected outcome. Specifically, the findings presented in Table 17, above, demonstrate that the overall average daily calls for service increased by 20%, from 1.75 to 2.10 calls, which is counter to what was predicted. This increase in the daily calls for service average was also found when the calls for service were relating to each of the certain crime types included. There was an increase of about 20% observed in regard to crimes against person; an increase of 20% was observed for crimes against property, and an approximate 42% increase in theft *of* motor vehicle was noted, as well as a 50% increase in thefts *from* motor vehicle thefts. Each of these increases require a more nuanced understanding of the deployment locations that is not possible with the available data. Factors to assess would be the area demographics, socioeconomic statuses, and even the surrounding geographical terrain of these deployment sites in Bedford.

Calls for Service

As indicated in Table 17 in Bedford, Texas a tower was deployed 30 of the days analyzed and not deployed 112 days. There were 195 calls for service when a tower was deployed and 64 when a tower was not deployed. When a tower was deployed the average calls for service was 2.10 ($SD = 1.66$). When a tower was not deployed the average calls for service was 1.75 ($SD = 1.39$). While the minimum number of calls for service per day was zero for tower deployment and tower non-deployment the maximum calls for service had a difference. When a tower was deployed six calls of service was the maximum while when a tower was not deployed the maximum was 14.

Crimes Against Person

There were 56 calls for service relating to crimes against person during the 112 days when a tower was not deployed and 18 during the 30 days when a tower was present. The average calls for service were 0.60 ($SD = 0.77$) when a tower was deployed as compared to the calls for service average of 0.50 ($SD = 0.78$) when a tower was not deployed. Calls for service for crimes against person had a minimum of zero per day for both a deployed and not deployed tower. The maximum calls for service per day was four when a tower was not deployed and three when a tower was deployed.

Crimes Against Property

Bedford, Texas had 140 calls for service relating to crimes against property during the 112 days when a tower was not deployed and 45 during the 30 days when a tower was deployed. The average of those calls for service relating crimes against property when a tower was deployed was 1.50 ($SD = 1.53$), compared to a lower average of 1.25 ($SD = 1.22$) for calls for service per day when a tower was not deployed. There were days, both when a tower was deployed and when was not, that there were no calls for crimes against property. The maximum calls for service were seven when a tower was not deployed and eight when one was.

Theft of Motor Vehicle

There were five calls for service relating to theft of motor vehicle during the 30 days when a tower was deployed and thirteen during the 112 days when a tower was not deployed in Bedford, Texas. The average calls for service when a tower was deployed was 0.17 ($SD = 0.38$). This is in comparison to a lower deployed tower calls for service average of 0.12 ($SD = 0.37$). The minimum number of calls for service was zero for when a tower was deployed and when it

was not. The maximum number of calls for service per day for theft *of* motor vehicle was two without a tower deployed and one with a tower deployed.

Theft from Motor Vehicle

In Bedford, Texas there were nine calls for service for theft *from* motor vehicle during the 30 days when a tower was deployed as compared to 22 during the 112 days when a tower was not deployed. When a tower was not deployed the average calls for service relating to theft *from* motor vehicle was 0.20 ($SD = 0.78$). This is compared to an increased average of 0.30 ($SD = 0.99$) for theft *from* motor vehicle calls when a tower was deployed. There were days when a tower was deployed, as well as when was not, that there were zero calls for service at a minimum. The maximum number of calls for service for theft *from* motor vehicle by day was seven when a tower was not deployed and five when one was.

Table 18

Descriptive Statistics for Crimes Around SkyWatch Towers: Daily Calls for Service by Individual Deployment Locations in Bedford, Texas

Variable	Pre-Deployment					Deployment					Post-Deployment				
	N	Min	Max	Mean	S.D.	N	Min.	Max.	Mean	S.D.	N	Min.	Max.	Mean	S.D.
Texas (Bedford)															
Site #1															
Calls for Service	36	1	7	2.57	2.07	13	0	5	2.17	1.72	30	0	4	1.87	1.26
Site #2															
Calls for Service	37	0	5	1.50	1.30	29	0	4	1.81	0.98	33	0	4	1.63	1.01
Site #3															
Calls for Service	23	0	4	1.28	1.36	22	1	8	2.75	2.55	36	0	4	1.89	1.24

Individual Deployment Locations- Calls for Service

Bedford, Texas had three deployment locations. As seen in Figure 17 through Figure 19 below a change in the calls for service average was noted across the pre-deployment phase, deployment phase, and post-deployment phase throughout each site. For example, Site #1 was the only site that had a decrease in the average calls for service per day when comparing pre-deployment and during deployment.

In Site #2 and Site #3 increases were seen between their pre-deployment and deployment calls for service averages. Both sites showed decreases in the call for service averages between during deployment and post-deployment.

Figure 17

Calls for Service, Site #1 Bedford, Texas

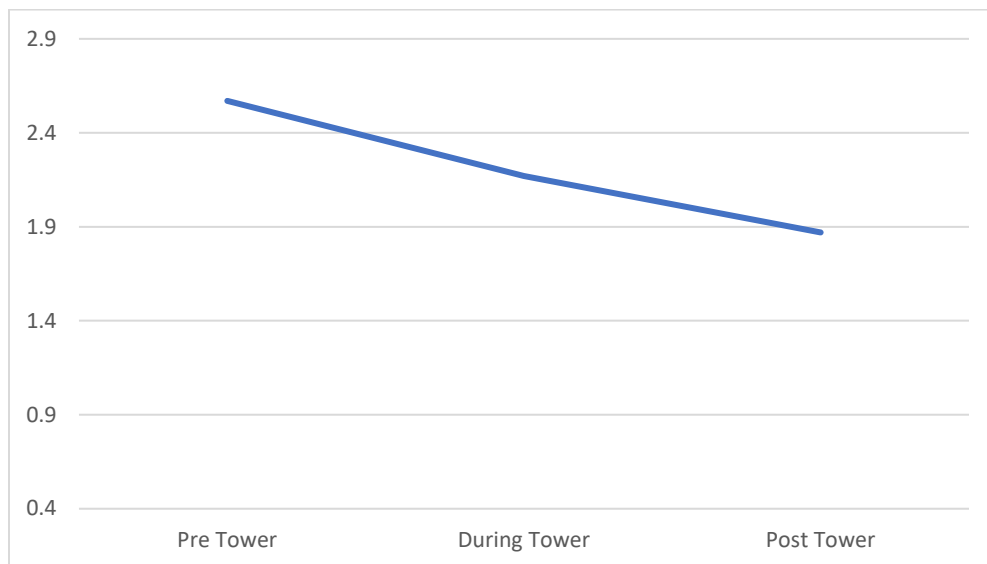


Figure 18

Calls for Service, Site #2 Bedford, Texas

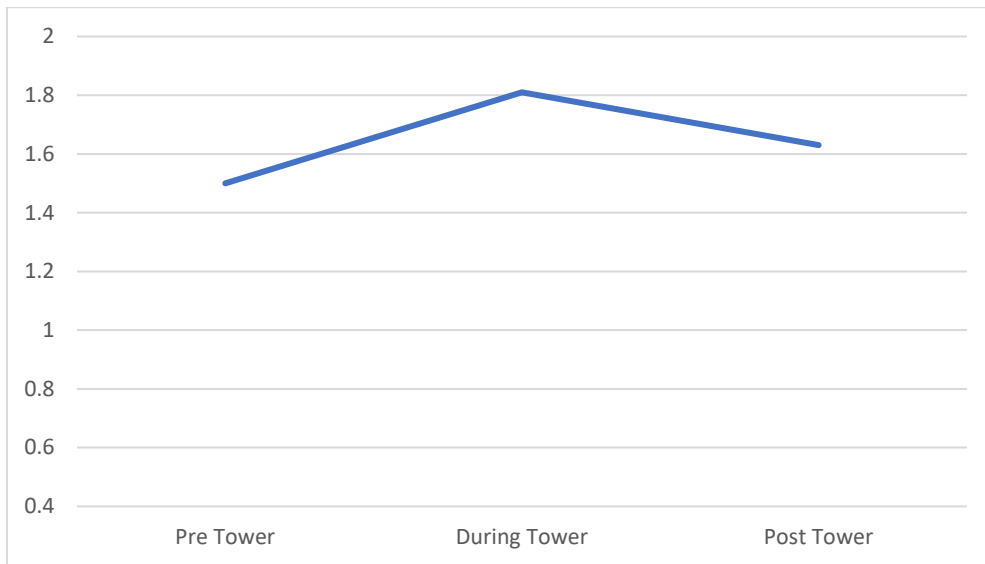


Figure 19

Calls for Service, Site #3 Bedford, Texas

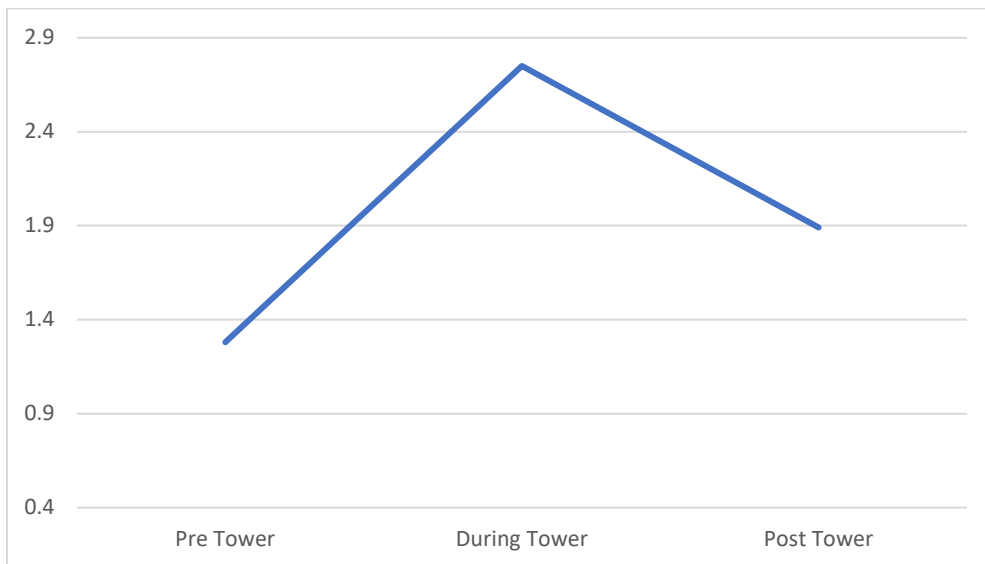


Table 19

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service for Garland, Texas

Variable	Tower Not Deployed (188 Days)					Tower Deployed (144 Days)				
	N	Min	Max	Mean	S.D.	N	Min	Max	Mean	S.D.
Texas (Garland)										
Calls for Service	181	0	14	0.96	1.60	141	0	6	0.98	1.31
Crimes Against Person	14	0	2	0.07	0.28	20	0	2	0.14	0.37
Crimes Against Property	167	0	14	0.89	1.55	121	0	6	0.84	1.23
Theft <i>of</i> Motor Vehicle	0	--	--	--	--	0	--	--	--	--
Theft <i>from</i> Motor Vehicle	23	0	4	0.12	0.54	11	0	2	0.08	0.29

Garland, Texas

Overview Garland Texas

In analyzing the overall effect of a SkyWatch tower being deployed in Garland, Texas as compared to when one is not, mixed results, as seen with all the other individual jurisdictions, were found. Specifically, the findings presented in Table 19, above, demonstrate that the overall average daily calls for service increased, but only slightly, by 2%, from 0.95% to 0.98% calls, when a tower was deployed. While counter to what was predicted the increase is not remarkable. This increase in the daily calls for service average however was also found when the calls for service were relating to crimes against person. Specifically, the average calls for service doubled for crimes against person when a tower was deployed. This is a notable increase that can be attributed to increased reporting of incidents or potential other social or environmental variables that are not identifiable with the data available.

There were however other findings that demonstrated decreases in the average calls for service when a tower was deployed. For example, crimes against property an almost 6% decline was observed and theft *from* motor vehicle had an approximate 33% decrease noted. This was the first time, at the jurisdictional level, a decrease was seen in the average calls for service relating to theft *from* motor vehicle and offers yet another area of analysis for future research.

Calls for Service

As indicated in Table 19 a total of 322 calls for service were analyzed from Garland, Texas. Of these 141 were during the 144 days when a tower was deployed and the remaining 181 were during the 188 days when no tower was deployed. The average calls for service during tower deployment was 0.98 ($SD = 1.31$). The calls of service average without a tower deployed was 0.96 ($SD = 1.60$). The minimum number of calls for service per day was zero for when a

tower was deployed and when one was not. When a tower was not deployed the maximum number of calls for service was 14 while when a tower was deployed the maximum number of calls for service per day was six.

Crimes Against Person

There were 20 calls for service relating to crimes against person during the 144 days when a tower was deployed as compared to 14 during the 188 days when one was not deployed in Garland, Texas. When a tower was deployed the calls for service relating to crimes against person average was 0.14 ($SD = 0.37$). This is compared to a lower average of 0.07 ($SD = 0.28$) when a tower was not deployed. There were days when a tower was deployed, as well as when was not, that there were zero calls for service. The maximum number of calls for service for crimes against person per day was the same for both deployed and not deployed at two.

Crimes Against Property

In Garland, Texas calls for service for crimes against property was 167 during the 188 days when a tower was not deployed versus 121 during the 144 days when a tower was deployed. The average calls for service with a tower deployed was 0.84 ($SD = 1.23$) as compared to an average of 0.89 ($SD = 1.55$) for when a tower is not deployed. The minimum calls for service relating to crimes against property are the same, zero, with both a deployed and not deployed tower. The maximum calls for service per day is higher, 14, when a tower is not deployed than the six when a tower is deployed.

Theft of Motor Vehicle

The Garland, Texas data did not contain any clear indication of calls for service relating to theft of motor vehicle. The participant that provided the dataset was contacted on multiple

occasions via telephone and email correspondence to clarify this, however no response was ever received. No analysis was able to be conducted on theft *of* motor vehicle for this jurisdiction.

Theft from Motor Vehicle

A total of 34 calls for service for theft *from* motor vehicle were noted. Twenty-three of these calls were during the 188 days when a tower was not deployed and the remaining 11 occurred during the 144 days when a tower was deployed. The average calls of service per day relating to theft *from* motor vehicle when a tower was not deployed was 0.12 ($SD = 0.54$). When a tower was not deployed the average calls for service per day was 0.08 ($SD = 0.29$). The minimum number of calls for service per day for theft *from* motor vehicle was zero for both tower deployed, and tower not deployed. The maximum number of calls was four for when a tower is not deployed and two for when one was.

Table 20

Descriptive Statistics for Crime Around SkyWatch Towers: Daily Calls for Service by Individual Deployment Locations in Garland, Texas

Variable	Pre-Deployment					Deployment					Post-Deployment				
	N	Min	Max	Mean	S.D.	N	Min.	Max.	Mean	S.D.	N	Min.	Max.	Mean	S.D.
Garland (Texas)															
Site #1															
Calls for Service	13	0	3	0.63	1.01	15	0	3	0.67	0.80	17	0	3	0.84	0.96
Site #2															
Calls for Service	47	0	14	3.54	3.60	35	0	6	2.59	1.82	33	0	6	2.29	1.94
Site #3															
Calls for Service	13	0	5	0.92	1.38	40	0	4	0.83	1.70	16	0	4	1.15	1.46
Site #4															
Calls for Service	0	----	----	----	----	0	----	----	----	----	0	----	----	----	----
Site #5															
Calls for Service	7	0	2	0.45	0.69	9	0	2	0.50	0.63	14	0	3	0.92	0.86

Table 20 Continued*Descriptive Statistics (Calls for Service by Day) for Individual Sites in Garland, Texas*

Variable	Pre-Deployment					Deployment					Post-Deployment				
	N	Min	Max	Mean	S.D.	N	Min.	Max.	Mean	S.D.	N	Min.	Max.	Mean	S.D.
Texas (Garland)															
Site #6															
Calls for Service	10	0	2	0.57	0.85	23	0	4	1.17	1.10	18	0	2	1.07	0.80
Site #7															
Calls for Service	9	0	2	0.64	0.92	3	0	2	0.50	1.00	0	-----	-----	-----	-----

Individual Deployment Locations- Calls for Service

Garland, Texas had seven deployment locations. As with the past four jurisdictions presented the calls for service average varied between phases of pre-deployment, during deployment, and post-deployment across each individual site. These variations are presented in Figure 20 through Figure 25 below. Three of the sites, #2, #3, and #7 showed a decrease in the calls for service averages between pre-deployment and during deployment. Site #2 and Site #7 also demonstrated a decrease in the average calls for service between during deployment and post-deployment.

Sites #1, #5, and #6 all had an increase in the calls for service per day averages between pre-deployment and during deployment. Site #1 and Site #5 had an average for post-deployment calls for service that increased over the other two stages. Site #7 had an average for post-deployment calls for service that decreased from a higher during deployment average.

Site #4 presented a different set of circumstances. There were no calls for service prior to the tower deployment, no calls for service during deployment, and no calls for service post-deployment. The tower was deployed for 16 days in an area that appears to not have generated any police response. There were notes provided with the dataset that this tower had been requested by a business owner for a machinery plant who had received threats from a previous employee. The tower was requested to provide employees a sense of security in the parking areas. This location was included as it met the requirements for length of deployment and did have the potential to include calls for service within the radius of the tower location.

Figure 20

Calls for Service, Site #1 Garland, Texas

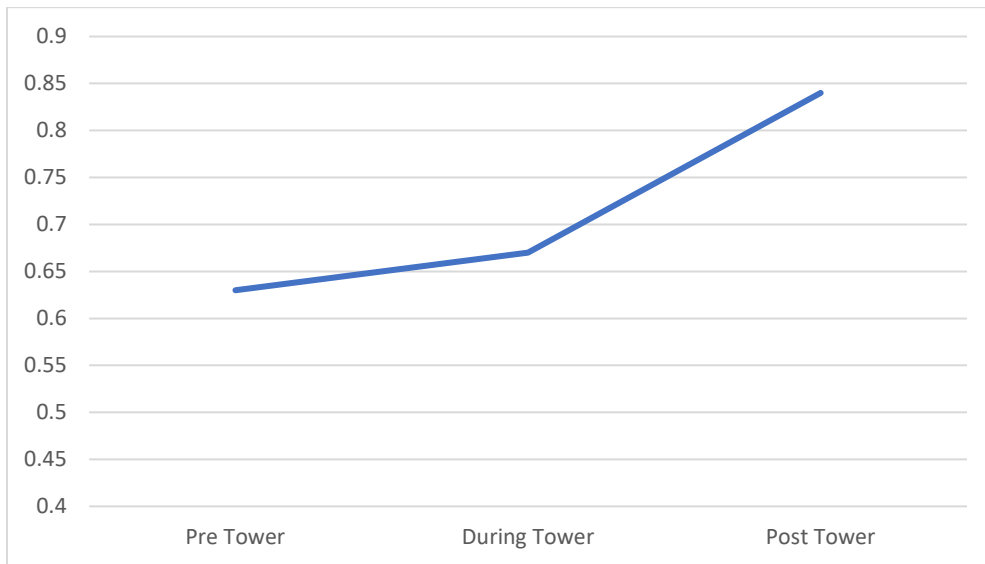


Figure 21

Calls for Service, Site #2 Garland, Texas

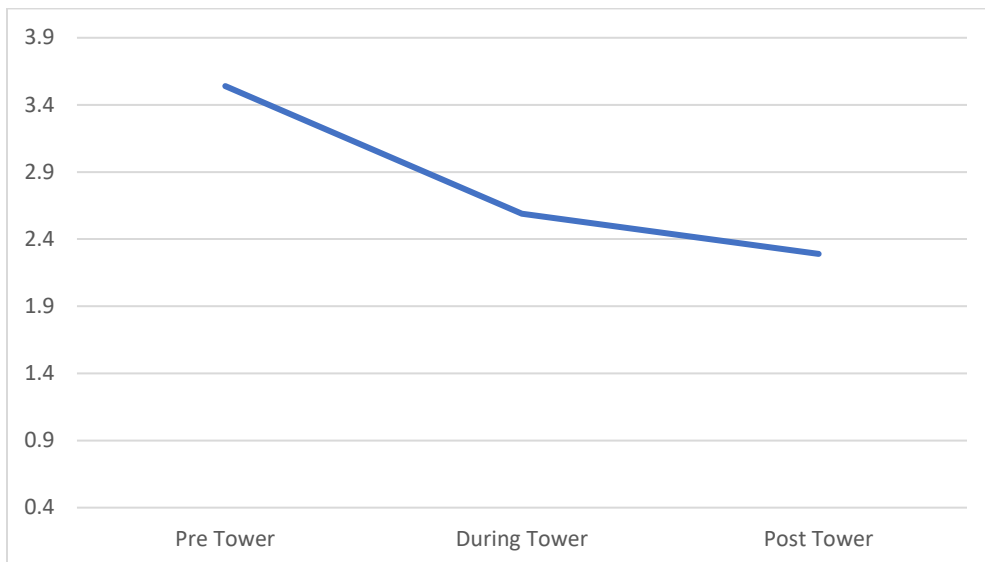


Figure 22

Calls for Service, Site #3 Garland, Texas

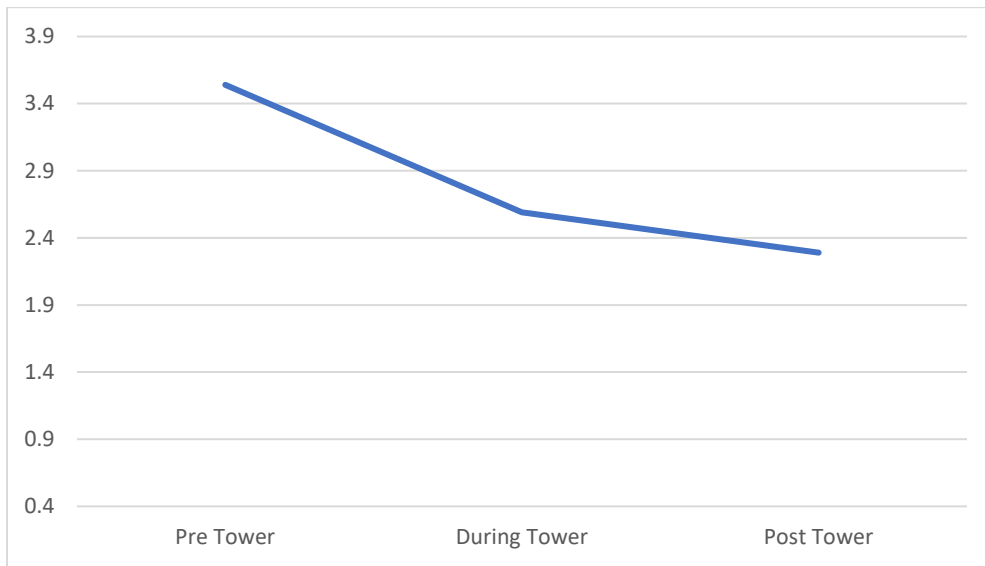


Figure 23

Calls for Service, Site #5 Garland, Texas

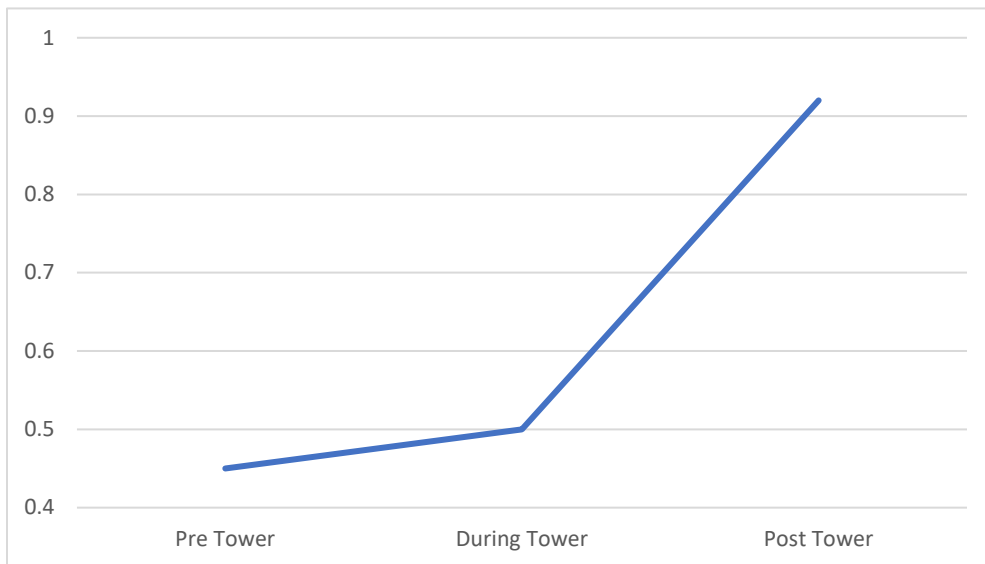


Figure 24

Calls for Service, Site #6 Garland, Texas

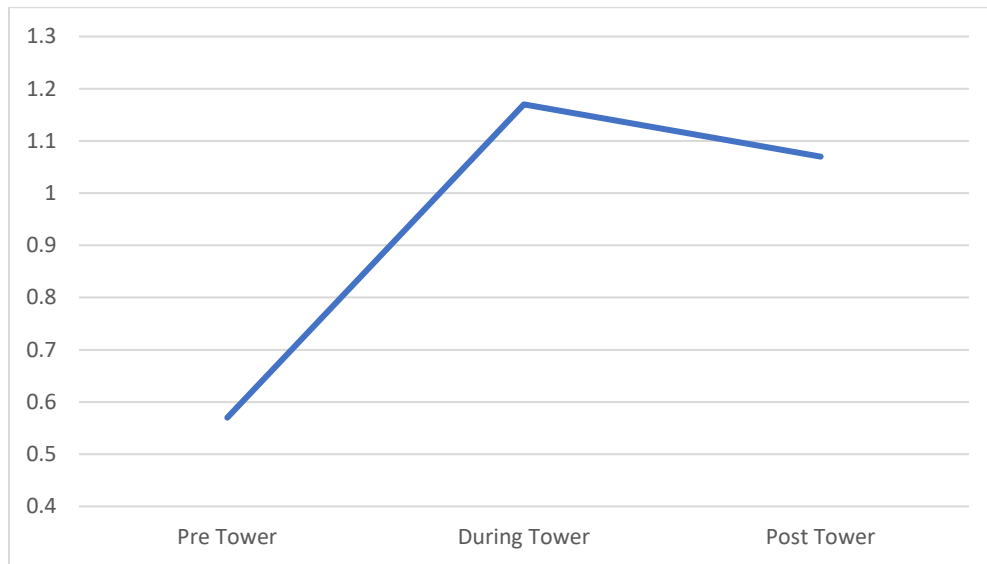
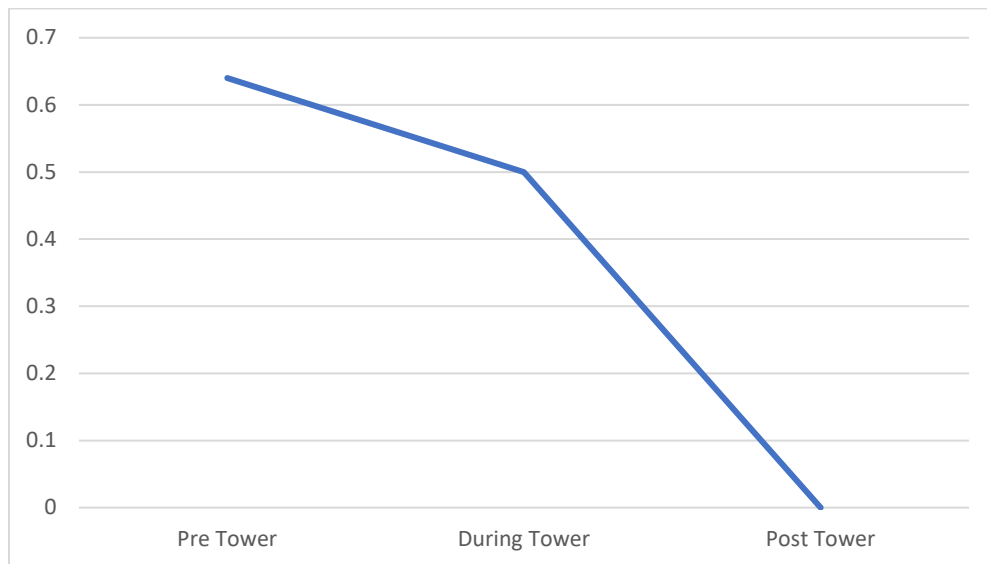


Figure 25

Calls for Service, Site #7 Garland, Texas



The goal of deploying a tower, as understood from how SkyWatch is marketed, is that it will deter criminal activity. This mission was further reinforced by interviewees throughout the qualitative phase and thereby led to the development of the study's research hypotheses. These

hypotheses focused on a reduction in calls for service in general, as well as by crime type, when a tower was deployed. While the results presented to not fully support SkyWatch as an effective crime prevention strategy in all aspects analyzed, there were positive effects noted to some extent in all jurisdictions except one, Bedford, Texas. Potential reasoning for these variations will be discussed in the next chapter.

Independent Samples T-test

Lastly, to provide a more in-depth analysis beyond descriptive statistics, an additional statistical approach was utilized to evaluate the effectiveness of SkyWatch surveillance towers as a crime prevention tool. Again, effectiveness, as defined by the study's participants during the qualitative phase, was to be considered as a reduction in calls for service within an area of a deployed SkyWatch tower. Based on the data that was obtained from the participating agencies, the most appropriate statistical analyses that could be conducted were independent t-tests.

Independent sample t-tests were conducted on the data in aggregate for all the jurisdictions utilizing as the dependent variables the means for daily calls for service, daily calls for service for crimes against person, daily calls for service for crimes against property, daily calls for service for theft *of* motor vehicle, and daily calls for service for theft *from* motor vehicle. Additional independent t-tests were performed on the data for each jurisdiction utilizing the same dependent variables. The purpose of conducting these independent sample t-tests at the jurisdictional level was to evaluate whether there was any statistically significant reduction in calls for service in general, as well as by crime type, when a tower was deployed versus when was not within the individual jurisdictions included in the study.

Results of the independent sample t-tests demonstrated a significant reduction in calls for service relating to thefts *of* motor vehicles when a tower was deployed compared to when one

was not. Specifically, thefts *of* motor vehicles from all jurisdictions were compared when a tower was not being deployed ($M = 0.07$, $SD = 3.91$) versus when a tower was deployed ($M = 0.03$, $SD = 0.21$) and demonstrated thefts *of* motor vehicles were higher during the non-deployment period. The results of an independent t-test showed that there was a statistically significant reduction in thefts *of* motor vehicles: $t = 2.21$, $p < .001$. It appears from these findings that when SkyWatch towers were deployed, there was a decrease in calls for service relating to thefts *of* motor vehicles.

A reduction in calls for service for thefts *of* motor vehicles was also found statistically significant at the jurisdictional level for Montgomery, Alabama. Here, thefts *of* motor vehicles from the SkyWatch tower deployment locations in Montgomery were compared when a tower was not being deployed ($M = 0.17$, $SD = 0.46$) to when a tower was deployed ($M = 0.07$, $SD = 0.25$) and showed higher thefts *of* motor vehicles when a tower was not present. The results of an independent samples t-test demonstrated that this was a statistically significant reduction, with $t = 1.66$, $p < .001$. These findings further support the previous results that when a SkyWatch tower was deployed, calls for service relating to thefts *of* motor vehicles decreased.

None of the other independent sample t-tests, either at the aggregate or individual levels, reached the level of statistical significance. There was not a significant reduction in average daily calls for service overall or for any specific crime types at the aggregate or individual jurisdictional level. Additionally, while there were interesting and unexpected findings at the jurisdictional level with increases in the average daily number of calls for service in total, as well as for those relating to specific crimes, the research hypotheses were formulated on a reduction in the average calls for service. Therefore, in those cases where an increase was seen it was not appropriate to test for statistical significance. As will be discussed in more detail in the following

chapter, future research is suggested in which the focus is directed at individual deployment locations within a single jurisdiction.

CHAPTER EIGHT: DISCUSSION AND CONCLUSIONS

Within this chapter, the key findings from the quantitative components of this study will be presented. The aim of analyzing the available data was to objectively and empirically test what the interviewees voiced within the qualitative phase. Specifically, the overall census of the participants interviewed, (86%), expressed the belief that the deployment of a SkyWatch surveillance tower deterred criminal activity in the area surrounding its location. The following section offers a discussion of the results obtained through statistical analysis and how they compare with the perceptions of law enforcement personnel put forth earlier.

Discussion (Quantitative)

Within the qualitative stage of the study, the majority of the participants, within semi-structured interviews, voiced an opinion that deployment of a SkyWatch tower deterred crime in that location. The interviewees reported this effectiveness to be seen in fewer calls for service in the area of deployment, however none were able to provide any supportive statistical analysis for this claim. The purpose of the quantitative phase was to conduct these analyses that those law enforcement agencies participating in the study had not done so themselves.

The specific dependent variables assessed while generated from the qualitative data were also supported in past research on a similar panoptic crime prevention strategy, CCTV. These included the daily number of calls for service, the daily number of crimes against person, the daily number of crimes against property, the daily number of thefts of motor vehicle, and the daily number of thefts from motor vehicle. The hypothesis presented for each of these variables was that there would be a reduction in the calls for service in general, as well as in those relating to each variable, between when a tower was deployed versus when one was not. These

hypotheses were tested through the use of univariate and bivariate statistics. Table 21 summarizes these hypotheses and indicates the overall results of the analyses.

Table 21

Quantitative Hypotheses and Conclusions

Research Hypothesis	Level of Analysis	Conclusion
There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower between when one is deployed versus when one is not.	All States Combined	Null not rejected
	Jurisdictional	Null not rejected
There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower, relating to property crimes, between when a tower is deployed versus when one is not.	All States Combined	Null not rejected
	Jurisdictional	Null not rejected
There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower, relating to thefts <i>from</i> motor vehicles, when a tower is deployed versus when one is not.	All States Combined	Null not rejected
	Jurisdictional	Null not rejected

Table 21 Continued

Research Hypothesis	Level of Analysis	Conclusion
There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower, relating to motor vehicle thefts, when a tower is deployed versus when one is not.	All States Combined	Null rejected
	Jurisdictional	Null rejected
There will be a reduction in the average daily number of calls for service in the area surrounding a SkyWatch tower, relating to crimes against person, when a tower is deployed versus when one is not.	All State Combined	Null not rejected
	Jurisdictional	Null not rejected

Calls for Service

This study hypothesized that there would be a reduction in the average daily calls for service in the area surrounding a deployed SkyWatch tower versus when one was not deployed. In evaluating aggregated data for all jurisdictions, the average daily calls for service appeared slightly lower in instances when the SkyWatch tower was not deployed. However, this difference failed to reach statistical significance. When further analyzing the data from individual locations, similar findings were observed in Aventura, Florida and Garland, Texas. As with the aggregated data analysis, the differences in daily averages for SkyWatch deployment and SkyWatch non-deployment failed to reach statistical significance.

Interestingly, the data analysis yielded results contrary to our initial hypotheses when analyzing the data for individual jurisdictions, as several of these locations evidenced higher average daily calls for service when SkyWatch was deployed. Specifically, Charlotte-Mecklenburg, North Carolina, Montgomery, Alabama, and Bedford, Texas demonstrated an increase in the average daily calls for service despite the presence of a SkyWatch tower. As such, a key inquiry is whether more crimes were being committed during a tower deployment or it could be possible that with the obvious police presence, community members were more likely to request assistance in situations of possible victimization. As either scenario is plausible, future research should further investigate these phenomena and determine what type of effect SkyWatch has on crime reduction.

In further analyzing the descriptive statistics, similar fluctuations in the mean were observed with the individual site-by-site jurisdictions. For instance, Site #2 in Montgomery, Alabama had an increase in the average daily calls for service when a tower was deployed, versus the pre-deployment stage, however the average decreased from the during deployment phase in the post-deployment period. This same finding occurred in Site #3 for Charlotte-Mecklenburg, North Carolina, as well as Site #2 in Bedford, Texas and Site #1 in Aventura, Florida.

Sites #3 and #4 in Montgomery, Alabama demonstrated a decrease in the average daily calls for service during deployment versus pre-deployment, however there was an increase in the averages during the post-deployment phase. Site #3 in Aventura, Florida, Site #3 in Garland, Texas, and Sites #3 and #4 had similar results.

A decrease in the average daily calls for service during deployment versus pre-deployment as well as between deployment and post-deployment was noted in several

deployment locations. Specifically, Site #6 in Montgomery, Alabama, Sites #1 and #4 in Charlotte-Mecklenburg, North Carolina, Site #1 in Bedford, Texas, and Sites #2 and #7 in Garland, Texas all were noted to have a reduction in the average daily calls for service during and after a tower deployment as compared to the pre-deployment stage.

While this study yielded valuable insight concerning the efficacy of SkyWatch towers, further analyses should be conducted to further broaden the scope of this research. For example, the demographics of the area, a more detailed understanding of the premises where the towers are deployed, weather conditions at the time of deployment, and even deployment during special occasions such as holidays, are just a few potential factors that could be influencing the current results. Additionally, having information pertaining to whether the towers were manned, equipped with CCTV and monitored remotely, or just deployed and left unmanned would be of assistance in a more nuanced evaluation.

Crimes Against Person

This study hypothesized that there would be a reduction the average daily calls for service relating to crimes against person, such as aggravated assault, simple assault, or intimidation (United States Department of Justice-Federal Bureau of Investigation, 2019, para. 2), when a SkyWatch tower was deployed. Upon evaluation of the aggregated jurisdiction data, the means for crimes against person were almost identical. As such, our initial hypotheses concerning crimes against person were not validated with our data. At the individual jurisdictional level, there was an increase in the average daily calls for service for crimes against person in Charlotte-Mecklenburg, North Carolina and Garland, Texas when a tower was deployed. The remaining jurisdictions also appeared to have higher average daily calls of service for these crimes during SkyWatch deployment.

A potential issue to be recognized with the above findings must be noted, however. The sub-sample size of crimes against person, out of the total calls for service for each jurisdiction, was extremely small. For instance, Charlotte-Mecklenburg had 31 crimes against person calls for service out of 182. Still, there were nine crimes against person when a tower was deployed as compared to 22 when one was not. For Garland, there were 34 crimes against person calls for service out of 322. Twenty of these occurred when a tower was deployed and 14 when there was not a tower deployed. This indicates that Charlotte-Mecklenburg had only 17% of daily calls for service being crimes against a person. Of this 17%, there were only nine crimes against person reported as compared to 22 when a tower was not deployed. For Garland, crimes against person represented only 11% of all daily calls for service. Specifically, of this 11% the opposite of Charlotte-Mecklenburg was found in that more crimes against person were documented when a tower was deployed versus when one was not. The contradiction of these findings is an example of why more single jurisdictional-level only research needs to be conducted.

Crimes Against Property

This study hypothesized there would be a reduction in the average daily calls for service relating to crimes against property with a SkyWatch tower being deployed as compared to when one was not. This hypothesis was derived not only from this study's interviewees, but also from prior literature relating to CCTV. Specifically, Chatterton and Frenzf (1994) noted a CCTV system placement not only contributed to an improvement of arrest rates because of their recordings, but also resulted in a significant decline in burglaries.

Within the combined jurisdictions overall there was seen a lower mean for daily calls for service for crimes against property when a tower was deployed versus when one was not deployed. This decrease was not statistically significant, however similar lower means for daily

calls for service relating to crimes against property with tower deployment were noted at the individual jurisdictional level for Aventura, Florida, Charlotte-Mecklenburg, North Carolina, and Garland, Texas. Again, however these reductions were not statistically significant. The null hypothesis of no reduction in the mean for daily calls for service for crimes against property when a tower is deployed versus when one is not deployed could not be rejected.

Bedford, Texas and Montgomery, Alabama had an increase of the daily calls for service mean when a tower was deployed. Both had means for daily calls of service relating to crimes against property that were higher when a tower was deployed versus when one was not. As noted previously these jurisdictions having increased average daily calls for service for property crimes could be the result of an awareness of police presence and therefore a factor in more citizens reporting incidents.

Theft *of* Motor Vehicle

Another hypothesis of this study was that there would be a reduction in the average number of daily calls for service relating to thefts *of* motor vehicles when a SkyWatch tower was deployed as compared to when one was not. In relating CCTV research Caplan and colleagues (2011) found that a decrease in car theft occurred when CCTV surveillance was present. Similar findings were obtained in this study. With the combined jurisdictional data not only was there a lower theft *of* motor vehicle daily calls for service average for a when a tower was deployed, versus when one was not, this reduction was found to be statistically significant. Here the null hypothesis was rejected as there was a statistically significant reduction in the average daily calls for service for theft *of* motor vehicle from when a tower was deployed versus when one was not. Similar findings were found at the jurisdictional level for Charlotte-Mecklenburg, North Carolina, Montgomery, Alabama, and Garland, Texas, although only Montgomery had a

reduction in the average daily calls for service relating to theft *of* motor vehicle that met a level of statistical significance. The null hypothesis therefore was rejected as there was a statistically significant reduction in the average daily calls for service for theft *of* motor vehicle in Montgomery, Alabama when a tower was deployed versus when one was not. However, in the other jurisdictions the null hypothesis was not rejected.

Bedford, Texas though had an increase in the average calls for service relating to theft *of* motor vehicle when a tower was deployed. When a tower was deployed the average of theft *of* motor vehicle was higher than when a tower was not deployed. This increase in the averages suggests the need for further research. The reason for this contradicting result, as compared to the other jurisdictions, is unclear and would require more jurisdictional analysis that is not possible with the current data provided by the department.

Theft *from* Motor Vehicle

The final hypothesis of this study was that there would be a reduction in the average number of daily calls for service relating to thefts from motor vehicles when a tower was deployed versus when one was not present. Prior research focusing on the utilization of CCTV to prevent this type of crime has been mixed. Caplan and colleagues (2011) found CCTV surveillance had no effect on thefts from within vehicles, while Poyner (1991) found drastic reductions in theft *from* vehicles. The findings from this study were just as uncertain with both increases and decreases in the average daily calls for service relating to theft *from* motor vehicle being found.

With the jurisdictional data all combined the means, for daily calls for service for theft *from* vehicle when a SkyWatch tower was deployed, was only slightly lower as compared to when one was not. The null hypothesis was that there would not be a reduction of daily calls for

service for theft *from* motor vehicle when a tower was deployed versus when was not. However, as the reduction did not meet a statistically significant level the null hypothesis failed to be rejected. At the individual jurisdictional level only Garland, Texas had similar results although the reduction too did not meet a level of statistical significance. In the data from Garland, Texas there was a decrease in the mean for daily calls for service relating to theft *from* motor vehicle when a tower was deployed versus when one was not. Again, the null hypothesis failed to be rejected as the reduction was not statistically significant. The remaining jurisdictions all had theft *from* vehicle means that were higher with a tower present than when one was not.

As with property crimes, which both thefts *of* motor vehicles and thefts *from* motor vehicles fall under, there is a possibility that the increased calls for service for these crimes is due to community members willingness to be more likely to report the crime as there is a clear police presence. Again, future research will need to be conducted to validate or negate this explanation. It could be there is simply an increased theft *from* motor vehicles and that in and of itself would need to be more fully assessed.

Conclusions (Quantitative)

Many participants from the qualitative interviews spoke of SkyWatch as a deterrent apparatus and it was this main finding that informed the quantitative analysis to evaluate these claims. The results from independent samples t-tests found the deployment of a SkyWatch tower did in fact reduce the average daily calls for service relating to thefts *of* motor vehicles in the aggregate of all of the sites, as well as in one individual level jurisdiction. Furthermore, an interesting finding, one contrary to what was hypothesized, was the increase in the average daily calls for service relating to crimes against person that was seen within all of the individual jurisdictions.

A potential reason for this increase in daily calls for service relating to crimes against person is that a deployed SkyWatch tower represents authority. It may be that there are not more crimes against person, but that more crimes against person are being reported. Having a presence that indicates ready availability of law enforcement personnel could allow more victims of crimes against person to come forward and call for assistance. A lack of reporting for such reasons as distrust of law enforcement may not be overcome with a deployed tower, however other positive factors may be present. Clear visibility of a police authority may incentivize reporting as it may negate a concern of having to wait for a response or to allow time to question whether reporting the incident is more hassle than it is worth. Having a tower deployed provides an ease of access, as well as a clear sign of authority, that could have led to calls for service being made that prior to a tower's deployment would not have been.

As seen with numerous studies of the closely related panoptic crime prevention tool of CCTV, the effectiveness of a SkyWatch tower as a deterrent mechanism are just as mixed. The independent t-tests found some statistical significance, however several of the dependent variables, such as calls for service relating to crimes against property and calls for service relating to theft *from* motor vehicle, did not reach a level of significance overall or for any jurisdiction. In fact, while daily calls for service, the proxy for crime utilized, from all the jurisdictions combined did show a lower mean when a tower was deployed versus when a tower was not deployed, this difference was not even statistically significant. Daily calls for service for theft *of* motor vehicle may have been found to be statistically significant, but only at the aggregate level and for one of the five jurisdictional levels. Even between jurisdictions means varied among the variables in relation to reduction or increases in daily calls for service for a particular crime type with a tower deployed versus one was not deployed. This inconclusiveness

is the call for future research, as without more in-depth jurisdictional data the reasoning cannot be parsed out.

To conclude the results of the multi-site analysis presented in Table 10 earlier do indicate that the deployment of a SkyWatch tower does show promise in reducing the average daily calls for service. However, when the jurisdictions are broken down into a site-by-site analysis the same results are not obtained. The variation between the sites can potentially be explained by a difference in geographic deployment locations. For instance, a tower deployed at a restaurant in an area with higher socio-economic status could have a different effect than one deployed within the same jurisdiction but in an area that has a different level of affluency. Similarly, different demographics and dispositions of individuals around a deployed tower could be a factor in the variance between sites. Some individuals may be more inclined to trust the police and therefore more willing to call for help when a crime occurs while others may be more reserved. It is precisely this lack of clarity regarding the factors impacting each deployment site that need to be addressed with more research.

CHAPTER NINE: LIMITATIONS

Throughout both the qualitative and quantitative phases of this study there were limitations that became apparent to the researcher. As this study was conducted utilizing a mixed methods approach the limitations identified were generally focused on each individual phase. Of course, as the qualitative component informed the process and analysis of the quantitative one any limitations from the study's first stage could have had some impact on the second stage. However, any effect is argued to be minimal as the main limitation of the quantitative stage was the limits of the data itself, a limit not affected by the qualitative process. Elaboration on this particular factor, as well as other limitations for both phases, will be discussed in the next sections.

Limitations: Qualitative

There are several limitations that must be noted regarding the qualitative phase of this study. First, while contact information of most participants was collected, the researcher was unable to engage in a process of "member checking" (Creswell & Miller, 2000) to ensure that the analytic interpretations represented the views of participants as many were unavailable for follow-up. It also must be noted that most of the participants were law enforcement personnel. Their perceptions and feelings may be affected by their own personal and employment history. Without interviewing more community members that have been present at an event, or solicit businesses surveilled by a tower, a full perspective of a tower's deployment cannot be obtained.

There were several other limitations that were also recognized by the researcher. One such limitation was that the interviews were not able to be recorded. Hand-written notes of what each participant said had to be taken with as much accuracy as possible. The participants were often asked to repeat what s/he said, especially with the telephone interviews, as their rate of

speech was faster than could copy by the researcher. To mitigate this limitation as much as possible the notes taken were read back to each participant at the conclusion of each interview. If the interviewee caught any errors in the notes, they were corrected, and the changes re-confirmed. Still although the researcher attempted to document precisely what was said the overall essence in some instances was the best that could be achieved. A verbatim dictation from a recording would have been more accurate but was not possible with this study.

As some may suggest not having a second coder for the qualitative phase was a limitation, the researcher argues here that if it was one it was of minimal impact. In fact, while intercoder reliability (ICR) has benefits its value is not universally embraced (O'Connor & Joffe, 2020) and can actually negate the interpretative framework of qualitative research (Braun & Clarke, 2006; Yardley, 2000). According to O'Connor and Joffe (2020), the role of a qualitative researcher is to interpret and convey the varying perspectives on a topic. In the case of this study researcher's job was to provide an in-depth analysis of law enforcement personnel's utilization and deployment of SkyWatch surveillance towers.

To accomplish this, the researcher had to ensure that all of the elements of solid qualitative research were achieved. Specifically, as noted by Yardley (2000), these essential qualities are "sensitivity to context, commitment and rigour, transparency and coherence, and impact and importance" (p. 219). As to sensitivity to context the researcher was at a bit of a disadvantage as she was unable to review and garner an understanding of prior work related to the effectiveness of SkyWatch towers as no empirical research had been done. Instead, the researcher immersed herself in works on deterrence theory and routine activities theory as applied to the closest policing crime prevention strategy to SkyWatch towers, CCTV.

The researcher also had to be aware of her role as a listener throughout the interview process. While the interviewee may have been the one answering the questions that the researcher posed with his/her own personal beliefs and opinions the researcher's position as the receiver of their words could contribute to what was being said (Ochs, 1997; Pomerantz & Fehr, 1997). This potential for social desirability affecting the answers given by the participants was recognized by the researcher when coding and analyzing the transcripts generated. Additionally, when conducting the interviews, the researcher was sensitive to the perspectives of all that were involved and aimed to promote an active role for the interviewee so s/he could feel free to speak openly and honestly. This sensitivity to participants' perspectives is considered essential to strengthen one's qualitative research (Yardley, 2000).

As to commitment, which Yardley (2000) defines as "a prolonged engagement with a topic" (p. 221), the researcher spent the last four years growing her knowledge of the applicable theories to this study, particularly deterrence theory and routine activities theory, as well as reading all relevant literature on CCTV and other surveillance-based crime prevention policing strategies. With no empirical research on SkyWatch towers, and only minimal media coverage, a focused review of the towers themselves was not possible, however her exposure to policing over the last fourteen years provided me with some insight into law enforcement protocols.

Another critical element of strong qualitative research is rigor. Rigor is determined by the study's completeness, specifically in term of its collection and analysis, that allows for gathering of all information required for a comprehensive examination suggests Yardley (2000).

Furthermore, a more in-depth and multi-layered mastery of the research topic under study can be achieved through "triangulation" of the data collection (Yardley, 2000, p. 222). Not only was my sample sufficient for data saturation to be achieved, but the collection of data for the quantitative

phase allowed for the triangulation recommended. Establishing that these two components were met it can be argued that rigor in the qualitative phase was met.

As to transparency it is critical for the researcher in a qualitative study to be very clear, detailed, and explicit with each step of the research process (Yardley, 2000). This was accomplished in this study by presenting in the methodology section a comprehensive description of the participant recruitment and interview process. Additionally, in the results section excerpts of a transcribed interview are provided, along with the corresponding Line-by-line coding to allow readers to see the coding process. Additionally, in the appendices included at the end of this study the recruitment letter, consent form, and interview protocol are all provided to ensure complete transparency of the study.

Even with each of these critical components for a strong qualitative research stage being met, there were the limitations previously recognized. However, despite these limitations, this study had many strengths. These showcase the impact and importance, two characteristics critical to qualitative research (Yardley, 2000), of this study on the effectiveness of SkyWatch surveillance towers.

First, “maximum variation” (Patton, 1990, p. 172) was sought by interviewing SkyWatch operators in New Jersey, Florida, Alabama, Texas, New York, California, North Carolina, and Tennessee. The participants were operating SkyWatch towers in jurisdictions that varied in physical size, population, demographics, and socio-economic level. Some departments utilized their towers at major events with crowds, while others deployed them only at retail areas. Additionally, some towers were deployed regularly while others had sporadic usage. Such variation serves to capture differing SkyWatch deployment experiences, thereby increasing the likelihood that varying perceptions were uncovered.

The usefulness and value of a study can be “assessed in relation to the objectives of the analysis, the applications it was intended for, and the community for whom the findings were deemed relevant” (Yardley, 2000, p. 223). The aim of this study was to evaluate the effectiveness of SkyWatch surveillance towers as a crime prevention policing strategy. To accomplish this the first step was to gather first-hand thoughts and opinions from those individuals, specifically certified and civilian law enforcement personnel, that have deployed and utilized a SkyWatch tower.

Teledyne FLIR’s marketing of a tower for high crime areas and surveillance and deterrence of parking lots (FLIR, n.d.) can be interpreted as promotional materials for financial gain, so a more practical evaluation of this costly equipment was sought through this study. The qualitative findings have accomplished that aim. Twenty individuals directly involved in the utilization and deployment of their agency’s SkyWatch tower shared their experiences through an open dialogue interview process. Each of the participants had their words documented and later analyzed so a more meaningful and in-depth understanding of these surveillance towers as a deterrent mechanism could be achieved.

It was from these interviews that additional research was directed in the quantitative stage of this study. The combination of the two phases of data collection and analysis culminating in findings that can be shared with law enforcement agencies that currently have SkyWatch towers, as well as those that are considering the purchase of one. These key policy implications that developed from the research will be discussed later in this chapter and provide a clear indication of the usefulness of this study.

Limitations (Quantitative)

One limitation that must be noted within the quantitative phase, as well as with the qualitative one, was the ability to collect the necessary data. Between the qualitative and quantitative phases over 35 law enforcement agencies were contacted. Time and again the researcher would ask to speak to the individual responsible for the agency's SkyWatch tower and more often than not the response would be, "what are you talking about?" After eventually tracking down an individual that at least knew what the tower was there often was not one person responsible for it, a deployment schedule was not kept, or they had no system for collecting and sharing calls for service data. One deputy police chief once reached literally responded when asked about deployment protocols and record-keeping for his agency's tower that "wow that would be a good idea. Thank you for telling me."

An additional limitation is the utilization of calls as the dependent variable. As indicated calls for service, as a measurement of crime, have been utilized throughout criminal justice research, however limitations of using such a proxy have also been noted (Klinger & Bridges, 1997). One of these limitations is the multiple methods by which police discover crimes. While citizens may call the police for service, they may also go in person to the law enforcement agency or stop officers on patrol (Klinger & Bridges, 1997). Other limitations include the potential inaccuracy of the caller's description of event and even the dispatcher's own interpretation of what is being reported which can lead to calls being misclassified (Klinger & Bridges, 1997). Within the current study evaluating the effectiveness of a SkyWatch tower in deterring crime based on a totality of calls for service will potentially address these latter concerns regarding measurement error, however the fact that there are other methods of a citizen contacting the police will need to be recognized. Additionally, two of the research questions to

be presented do seek to parse out the difference in calls for service between property crimes and violent crimes so the issue of inaccuracy of the recorded event, albeit it on the part of the caller or the dispatcher, needs to be recognized.

Another limitation to the quantitative phase of this study that must be recognized is the data itself. The calls for service that were requested from the participating law enforcement agencies are secondary data. As Maxfield and Babbie (2016) note agency records are often generated for purposes besides that of research. That is exactly the case here. The calls for service analyzed in this study were collected from a computer aided dispatch system. These calls and how they were documented were not done so with the purpose of evaluating the effectiveness of a deployed SkyWatch tower. While calls for service have been utilized readily as a proxy for crime, as previously discussed, the information the researcher was able to obtain from the CAD data was extremely limited and varied by jurisdiction.

Furthermore, gathering not only the CAD data, but also informational jurisdictional data, from the law enforcement agencies involved varied. Some agencies, such as Charlotte-Mecklenburg and Montgomery, had computer systems that offered more fine-honing of the data request, while those such as Aventura were only able to provide pre-formatted data with no other perimeters other than dates and districts. While the majority of the participants attempted to assist the researcher, they all had their own responsibilities that superseded any research material request.

A last limitation to note, particularly for the descriptive statistical analysis at the individual jurisdictional site-by-site level was the number of calls for service. When parsing the calls out into a pre-deployment, during deployment, and post-deployment the number of calls for service for the pre-deployment and post-deployment stages was reduced. In the other analyses all

calls for service when a tower was not deployed, pre- and post-deployment, were merged to compare that mean against the mean for calls for service when a tower was deployed. In splitting out these stages some sites had less calls for service in the separated stages, such as Site #6 in Montgomery, Alabama that had 45 calls pre-deployment, 33 calls during deployment, and only two calls during post-deployment. A consideration for future research is to evaluate why there was the reduction in the calls for service in that stage. Potentially it could be environment or situational circumstances that need a more in-depth analysis, but currently the variance in the calls needs to be recognized for the impact current study's results.

CHAPTER NINE: FUTURE RESEARCH AND POLICY IMPLICATIONS

In this final chapter directions for future research and policy implications, relating to the utilization and deployment of SkyWatch towers, are presented. As there has been no prior empirical research conducted on SkyWatch towers in general, nor their effectiveness as a crime prevention strategy, the current study has only begun to fill a large gap in the literature. The mission of the SkyWatch tower is to deter criminal activity around its deployment location. The need for future research to determine if this mission is being accomplished is not only important for policy implications within law enforcement agencies, but also in assessing the impact they have on communities where they are deployed.

Future Research

Several potential areas for future research have been mentioned earlier, however there are a few more that are worth discussing. The first is for an individual level, jurisdiction-by-jurisdiction and tower-by-tower, analysis of SkyWatch tower deployments. With departments such as Charlotte-Mecklenburg, North Carolina having over seven towers and other departments having at least two, Montgomery, Alabama, there is a need for a more thorough analysis. Parsing out each individual tower deployment would allow for a statistical analysis on a location-by-location basis beyond what was presented with descriptive statistics earlier. This may indicate that some deployment locations are more effective than others. Of course, this leads to further research and data collection of demographic information and such that may aid in understanding this more nuanced approach.

Another avenue for future research is mapping the jurisdictional level calls for service in relation to a deployed SkyWatch tower. Geographic Information System (GIS) in crime-mapping has been well supported in the research (Caplan, Kennedy, and Miller, 2011; Caplan, Kennedy,

and Petrossian, 2011; Waples et al., 2009) and especially in use of hot spots policing (Rosenfeld et al., 2014). Additional studies would involve geocoding each call for service address in the datasets collected to generate a list of latitudes and longitudes for them as well as those for each SkyWatch tower deployment location. The GIS program, ArcGIS Pro, could be utilized to map the location of each SkyWatch tower in relation to the corresponding calls for service. Maps could be produced for each SkyWatch deployment location that demonstrated calls for service before and after a tower was utilized as compared the actual period of deployment.

An additional analysis that could be done utilizing ArcGIS Pro would be kernel density. The kernel density tool calculates the density of features in an area (ersi, n.d.) and allows the researcher to analyze the density of crime. From the data currently collected for this study, or in future data collection kernel density could be used to calculate density of calls for service in relation to the presence of a SkyWatch tower. The kernel density maps could be weighted by number of days for comparison and with maps generated to show the difference around the towers in terms of the calls for service if one is deployed or not. Both of these mapping techniques could be helpful for visual descriptive when presenting the material to the target audience of this research, law enforcement officials.

Policy Implications

The aim of this study was to evaluate the deterrent effect of SkyWatch surveillance towers; a portable, modern-day equivalent of Bentham's (1791/2009) design for a brick-and-mortar edifice. What was found through the endeavor is that there needs to be significantly more research conducted on the utilization and deployment of these towers. Law enforcement agencies are spending hundreds of thousands of dollars on a tool that is marketed to be a crime prevention strategy, but is it an effective one? That question remains to be answered. This study is the first

step in determining the effectiveness of a SkyWatch tower to reduce calls for service in an area of deployment.

Cost-effectiveness needs to be determined by agencies that not only already have a tower, but also by those that are looking to purchase one. Placing a value on public safety may be an abstract notion that would be difficult to balance with an actual financial obligation when acquiring and maintaining a tower, however it too has its worth in a cost-benefit analysis. Having citizens returning to parking lots where they do not have their car stolen or broken into promotes business and community success. Having individuals not targeted for crimes against them allows them to go about their lives with work and leisure activities which again supports community and business development. A tower being present may also deter property damage which requires businesses or the jurisdictions to address and repair, thereby also reflecting a cost on openly considered.

Tied into cost-effectiveness is the crime-reduction aspect of a SkyWatch tower utilization and deployment. Crime is detrimental to individuals, communities, businesses, and even governments. If a SkyWatch tower can reduce even minimally criminal activity than the benefits of this would hopefully be reaped both on a micro and was a macro level. The findings of this study do point to an increase in calls for service relating to crimes against person, so a more critical analysis needs to be focused here to ascertain whether there is a correlation between the tower and such crimes or if there are other environmental or community factors at play.

The visibility of law enforcement when a tower is present is another policy implication to be considered. Is the clear presence of police necessarily a positive factor? This study sought the opinions and perspectives of law enforcement agents that actively deploy and utilize a SkyWatch tower as part of their everyday occupation. Gathering an understanding from individuals that live

or shop in areas where towers are deployed would be extremely beneficial. Interviewees expressed anecdotal claims from personal interactions with community members and business owners, but these were shared through the lens of the law enforcement agent. Their interactions with those individuals they have stories from relating to a tower may be under circumstances or varying social relationships that do not reflect the voices of the majority affected by a tower. Still police visibility not only as a deterrent but as a clear place of aid must also be considered.

Another policy implication is cost-efficiency. How well does a law enforcement agency provide the services they espouse by utilizing and deploying a SkyWatch tower? Several interviewees noted that a tower acted as a “force multiplier” (PO#21, white, male, officer; PO#5, white, female, sergeant; PO#11, white male, deputy chief). It was suggested that when deploying a tower there was less need for officers on the ground. A reduced number of officers having to patrol an area could be a cost-effective component as fewer manpower hours means a decrease in funds spent on salaries, however there is more to consider. The responses of law enforcement personnel to incidents need to be evaluated as if there are less officers, they may have less time to spend on addressing community members’ needs. The opposite could also be a viable consideration, and one which ties back to the police visibility implication, and that is how community members feel about having a reduction in police officers. Instead of literally have law enforcement agents patrolling on the street how does replacing them, or at least reducing their presence, with a tower, potentially even an unmanned tower, allow for the goal to “protect and serve” (PO#18, white male, staff sergeant) that is a law enforcement motto.

Cost-effectiveness, crime reduction, visibility of police, and cost-efficiency are all policy implications that need to be considered when acquiring, utilizing, and deploying a SkyWatch surveillance tower. This study has attempted to demonstrate the effectiveness of a tower as a

crime prevention strategy, and it has done so within the constraints of the data available. From the qualitative phase a tower was championed as a cost-effective, crime reduction mechanism, that offered a high visibility of police presence, while still having cost-efficiency. As the study moved into the quantitative phase the data did not provide a clear endorsement of a tower as a truly effective crime prevention policing strategy. With that said there were some promising results. At a minimum this study has provided insight into future research that is so desperately needed on these towers both from a law enforcement perspective, as well as that of those in the community impacted by the deployment of one.

There was one overall theme that was heard throughout each conversation with the law enforcement personnel contacted during this study, whether they were able to participate in the study or not. It was that they all believed their job was to keep their communities and those citizens within them safe and they felt the SkyWatch tower helped them with doing so. While a clear answer to the effectiveness of these towers as a crime prevention strategy was not obtained in this study, there were indications that they do indeed work to some extent. With proper policies in place for agencies utilizing and deploying SkyWatch towers future research may be able to give a more a conclusive evaluation of their deterrent effect.

Conclusion

This mixed method analysis of the deterrent effect of SkyWatch surveillance towers began with a discussion of deterrence theory and routine activities theory. The researcher suggested that the theoretical underpinnings complimented law enforcement personnel's utilization and deployment of SkyWatch towers. During the qualitative phase participants echoed the deterrence theory principle of certainty of apprehension. In fact, as noted earlier 67% referenced a certainty of being caught as reasoning for why a deployed tower deterred crime.

Another 86% of those interviewed commented on how when a tower was deployed a police presence was made very clear. This visibility of law enforcement can be assimilated with the guardian in the routine activities trifecta of why crime occurs. However, is having a capable guardian, in the form of a SkyWatch tower, enough to prevent criminal activity or is the certainty that one will be viewed from a tower committing an illicit act sufficient for a criminal to be deterred?

That is where the quantitative component of this study becomes important. The empirical testing of the available data did provide support for both theories at the aggregate level of the jurisdictions included in the study. However, when examining the data on the jurisdiction-by-jurisdiction level varying levels of support, as well as a clear lack of support, were found.

Overall, when SkyWatch towers were deployed a reduction in the average number of calls for service by day, as well as those calls relating to crimes against property and crimes against person, were noted. Even calls for service relating to specific property crimes, specifically theft *of* motor vehicle and theft *from* motor vehicle, were found with all the jurisdictions combined to have a reduction when a tower was deployed. It was not possible to parse out whether a certainty of being caught or just having a police presence was the cause of the decline, but either seem plausible.

It was because of the variance noted at the individual jurisdictions that prompted the site-by-site analysis that was conducted. However, instead of providing a clearer understanding the results demonstrated even more variation. It is this very issue that requires more research and nuanced analysis of the individual deployment locations. What can be gleaned from the findings presented in this study, even at the individual site level, is that SkyWatch surveillance towers can and do assist in reducing calls for service in the area surrounding their deployment location. Why

they might not do so in every site, even within the same jurisdiction, is an important question that must be examined with further research.

References

- Akers, R., & Sellers, C. (2013). *Criminological theories: Introduction, evaluation, and application*. Oxford University Press.
- Albrechtslund, A. (2008). Online social networking as participatory surveillance. *First Monday*, 13(3). Retrieved February 20, 2022, from First Monday:
<https://journals.uic.edu/ojs/index.php/fm/article/view/2142>
- Allen, M. (1994). "See you in the city!" Perth's citiplace and the space of surveillance. In *Metropolis Now: Planning and the Urban in Contemporary Australia* (pp. 137-147). Pluto.
- Anderson, E. (1999). *Code of the street: Decency, violence, and the moral life of the inner city*. W.W. Norton & Company.
- Andrejevic, M. (2004). *Reality TV: The work of being watched*. Rowman and Littlefield.
- Andresen, M., & Malleson, N. (2011). Testing the stability of crime patterns: Implications for theory and policy. *Journal of Research in Crime and Delinquency*, 48(1), 58-82.
- Armitage, R. (2002). To CCTV or not to CCTV?: A review of current research into the effectiveness of CCTV systems in reducing crime. *Narco Briefing Note*.
- Armitage, R., Smyth, G., & Pease, K. (1999). Burnley CCTV evaluation. *Crime Prevention Studies*, 10, 225-250.
- Avilez, M., Ciriello, C., Combemale, C., Elam, L., Kung, M., LaRosa, E., Low, C., Nagle, M., Shriver, R., & Shaffer, C. (2014). *Security and social dimensions of city surveillance policy: Analysis and recommendations for Pittsburgh*. Carnegie Mellon University.
Retrieved from chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/viewer.html?pdfurl=https%3A%2F%2Fw

www.cmu.edu%2Fdietrich%2Fehpp%2Fdocuments%2F2014-City-Surveillance-Policy.pdf&cld=1172947&chunk=true

Barak, G. (Ed.). (2007). *Violence, conflict, and world order: Critical conversations on state sanctioned justice*. Lanham, MD: Rowman & Littlefield.

Batty, M., Desyllas, J., & Duxbury, E. (2003). Safety in numbers? Modelling crowds and designing control for the Notting Hill carnival. *Urban Studies*, 40(8), 1573-1590.

Beccaria, C. (1986). *On crimes and punishments*. (D. Young, Trans.). Hackett Publishing Company. (Original work published 1764).

Becker, J., Hartwich, L., & Haslam, S. (2021). Neoliberalism can reduce well-being by promoting a sense of social disconnection, competition, and loneliness. *British Journal of Social Psychology*, 60, 947-963.

Bentham, J. (1791/2009). *Panopticon or the house of inspection*. Kessinger Publishing. (Original work published 1791).

Berdayes, V. (2002). Traditional management theory as panoptic discourse: Language and the constitution of somatic flows. *Culture and Organization*, 8, 35-49.

Bernard, R. (2012). *Social research methods: Qualitative and quantitative approaches* (2nd ed.). SAGE Publications.

Bigo, D. (2006). Security, exception, ban and surveillance. In D. Lyon (Ed.), *Theorizing surveillance: The panopticon and beyond* (pp. 46-68). Willan Publishing.

Birks, M., Chapman, Y., & Francis, K. (2008). Memoing in qualitative research: probing data and process. *Journal of Research in Nursing*, 13(1), 68-75.

Blackwood, R., & Hayes, R. (n.d.). *Measuring the perceived effects and best practices of mobile open area surveillance towers*. Loss Prevention Research Council.

- Blau, P. (1997). On limitations of rational choice theory for sociology. *The American Sociologist*, 28(2), 16-21.
- Boeije, H. (2002). A purposeful approach to the constant comparison method in the analysis of qualitative interviews. *Quality and Quantity*, 36, 391-409.
- Boesen, J., Rode, J., & Mancini, C. (2010). The domestic panopticon: Location tracking in families. *UbiComp '10: Proceedings of the 12th ACM international conference on Ubiquitous computing*, 65-74. Retrieved from <https://doi.org/10.1145/1864349.1864382>
- Bogard, W. (2006). Welcome to the society of control: The simulation of surveillance revisited. In K. Haggerty, & R. Ericson (Eds.), *The new politics of surveillance and visibility* (pp. 55-78). University of Toronto Press.
- Boudon, R. (1998). Limitations of rational choice theory. *American Journal of Sociology*, 104(3), 817-828.
- Bousquet, G. (1988). Space, power, globalization: The internet symptom. *Societies*, 4, 105-113.
- Boyd, D., & Ellison, N. (2008). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication*, 13, 210-230.
- Boyle, P., & Haggerty, K. (2009). Spectacular security: Mega-events and the security complex. *International Political Sociology*, 3, 257-274.
- Braga, A., & Bond, B. (2008). Policing crime and disorder hot spots: A randomized control trial. *Criminology*, 46(3), 577-608.
- Braithwaite, J. (1989). *Crime, shame, and reintegration*. Cambridge University Press.
- Brantingham, P., Brantingham, P. , & Andresen, M. (2017). The geometry of crime and crime pattern theory. In R. Wortley, & M. Townsley (Eds.), *Environmental criminology and crime analysis* (2nd ed., pp. 98-116). Routledge.

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Brayne, S. (2017). Big data surveillance: The case of policing. *American Sociological Review*, 82(5), 977-1008.
- Brenner, N., & Theodore, N. (2002). Cities and the geographies of “actually existing neoliberalism”. *Antipode*, 34(3), 349-379.
- Brent, J., & Kraska, P. (2010). Moving beyond our methodological default: A case for mixed methods. *Academy of Criminal Justice Sciences*, 21(4), 412-430.
- Burrows, J. (1979). The impact of closed circuit television on crime in the London Underground. In P. Mayhew, R. Clarke, J. Burrows, J. Hough, & S. Winchester (Eds.), *Crime in public view* (pp. 75-83). Home Office Research Study, No. 49. HMSO.
- Bursik, R., & Grasmick, H. (1993). The use of multiple indicators to estimate crime trends in American cities. *Journal of Criminal Justice*, 29, 509-516.
- Bursik, R., Grasmick, H., & Chamlin, M. (1990). The effect of longitudinal arrest patterns on the development of robbery trends at neighborhood levels. *Criminology*, 28(3), 431-450.
- Butchart, A. (1996). The industrial panopticon: Mining and the medical construction of migrant African labour in South Africa. *Social Science and Medicine*, 42(2), 185-197.
- Cairney, P. (2013). Standing on the shoulders of giants: How do we combine the insights of multiple theories in public policy studies. *The Policy Studies Journal*, 41(1), 1-21.
- Caluya, G. (2010). The post-panoptic society? Reassessing Foucault in surveillance studies. *Social Identities*, 16(5), 621-633.
- Campbell, D., & Ross, H. (1968). The Connecticut crackdown on speeding: Time series data in quasi-experimental analysis. *Law & Society Review*, 3(1), 33-54.

- Caplan, J., Kennedy, L., & Miller, J. (2011). Risk terrain modeling: Brokering criminological theory and GIS methods for crime forecasting. *Justice Quarterly*, 28(2), 360-381.
- Caplan, J., Kennedy, L., & Petrossian, G. (2011). Police-monitored cctv cameras in Newark, NJ: A quasi-experimental test of crime deterrence. *Journal of Experimental Criminology*, 7(3), 255-274.
- Carmel-Gilfilen, C. (2013). Bridging security and good design: Understanding perceptions of expert and novice shoplifters. *Security Journal*, 26(1), 80-105.
- Cerezo, A. (2013). CCTV and crime displacement: A quasi-experimental evaluation. *European Journal of Criminology*, 10(2), 222-236.
- Chambliss, W. (1966). The deterrent influence of punishment. *Crime & Delinquency*, 12(1), 70-75.
- Charmaz, K. (2014). *Constructing Grounded Theory*. Sage.
- Chatterton, M., & Frenzf, S. (1994). Closed-circuit television: Its role in reducing burglaries and the fear of crime in sheltered accomodation for the elderly. *Security Journal*, 5(3), 133-139.
- Christie, N. (1977). Conflicts as property. *The British Journal of Criminology*, 17(1), 1-15.
- Circo, G. (2018). *The effect of integrated CCTV camera systems on crime in public places: An evaluation of Detroit "green light"*. [Doctoral dissertation, Michigan State University] MSU Digital Respository. Retrieved from <https://d.lib.msu.edu/etd/19269>
- Circo, G., & McGarrell, E. (2021). Estimating the impact of an integrated CCTV program on crime. *Journal of Experimental Criminology*, 17, 129-150.
- Clarke, R. (1983). Situational crime prevention: Its theoretical basis and practical scope. *Crime and Justice*, 4, 225-256.

- Clarke, R. (1992). Introduction. In R. Clarke (Ed.), *Situational crime prevention: Successful case studies* (pp. 1-42). Harrow and Heston.
- Clarke, R. (1995). Situational crime prevention. *Crime and Justice*, 19, 91-150.
- Clarke, R. (1997). Introduction. In R. Clarke (Ed.), *Situational crime prevention: Successful case studies* (2nd ed., pp. 1-42). Harrow and Heston.
- Clarke, R., & Eck, J. (2005). *Crime analysis for problem solvers in 60 small steps*. Office of Community Oriented Policing Services, United States Department of Justice.
- Clarke, R., & Felson, M. (1993). Introduction: Criminology, routine activity, and rational choice. In R. Clarke, & M. Felson (Eds.), *Routine activity and rational choice: Advances in criminological theory* (Vol. 5, pp. 1-14). Transaction.
- Clarke, R., & Homel, R. (1997). A revised classification of situational crime prevention techniques. In S. Lab (Ed.), *Crime preventions at a crossroads*. Anderson Publishing.
- Clarke, R., & Newman, G. (2006). *Outsmarting the terrorists*. Praeger.
- Cohen, L., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, 44, 588-608.
- Cohn, E., & Rotton, J. (2003). Even criminals take a holiday: Instrumental and expressive crimes on major and minor holidays. *Journal of Criminal Justice*, 31, 351-360.
- Coleman, R. (2003). Images from a neoliberal city: The state, surveillance and social control. *Critical Criminology*, 12, 21-42.
- Cornish, D., & Clarke, R. (1985). Modeling offenders' decisions: A framework for research and policy. In M. Tonry, & N. Morris (Eds.), *Crime and justice* (Vol. 6, pp. 147-185). University of Chicago Press.

- Cornish, D., & Clarke, R. (2005). Classical and rational choice theories. In M. Lanier, & S. Henry (Eds.), *Essential criminology reader* (pp. 1-29). Westview.
- Cornish, D., & Clarke, R. (2014). *The reasoning criminal: Rational choice perspective on offending*. Transaction Publishers.
- Cornish, D., & Clarke, R. (2017). The rational choice perspective. In R. Wortley, & M. Townsley (Eds.), *Environmental Criminology and Crime Analysis* (2nd ed., pp. 29-61). Routledge.
- Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.
- Creswell, J., & Plano Clark, V. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.
- Creswell, J., & Poth, C. (2017). *Qualitative inquiry and research design: Choosing among five traditions* (4th ed.). SAGE Publications.
- Crow, M., & Symkla, J. (2013). A mixed methods analysis of methodological orientation in national and regional criminology and criminal justice journals. *Journal of Criminal Justice Education*, 24(4), 536-555.
- De Angelis, M. (2001). Global capital, abstract labour, and the fractal-panopticon. *The Commoner*, 1-19.
- De Landa, M. (1991). *War in the age of intelligent machines*. Zone.
- de Romilly, J., & Ferguson, J. (1980). Docility and civilization in ancient Greece. *Diogenes*, 28(10), 1-19.
- De Saulles, M., & Horner, D. (2011). The portable panopticon: Morality and mobile technologies. *Journal of Information, Communication & Ethics in Society*, 9(3), 206-216.

- de Souza e Silva, A. (2013). Location-aware mobile technologies: Historical, social and spatial approaches. *Mobile Media & Communication*, 1(1), 116-121.
- Debus-Sherrill, S., La Vigne, N., & Downey, M. (2017). CCTV in jail housing: An evaluation of technology-enhanced supervision. *Security Journal*, 30(2), 367-384.
- Decker, S., & Curry, G. (2012). "I'm down for my organization": The rationality of responses to delinquency, youth crime, and gangs. In A. Piquero, & S. Tibbets (Eds.), *Rational choice and criminal behavior: Recent research and future challenges* (pp. 197-218). Routledge.
- DeJonckheere, M., & Vaughn, L. (2019). Semistructured interviewing in primary care research: a balance of relationship and rigour. *Family Medicine and Community Health*, 7(2). Retrieved from <https://fmch.bmj.com/content/7/2/e000057>
- Deleuze, G. (1992). Postscript on the societies of control. *October*, 59, 3-7. Retrieved from <http://www.jstor.org/stable/778828>
- Deleuze, G., & Guattari, F. (1987). *A thousand places*. (B. Massumi, Trans.). University of Minnesota Press. (Original work published 1980).
- Deleuze, G., & Parnet, C. (1977/1987). *Dialouges*. (H. Tomlinson, & B. Habberjam, Trans.) The Athlone Press. (Original work published 1977).
- Ditton, J., & Short, E. (1999). Yes, it works, no, it doesn't: Comparing the effects of open-street CCTV in two adjacent Scottish town centres. *Crime Prevention Studies*, 201-223.
- Eck, J., & Maguire, E. (2005). Have changes in policing reduced violent crime? An assessment of the evidence. In A. Blumstein, & J. Wallman (Eds.), *The crime drop in America* (Revised ed., pp. 207-265). Cambridge University Press.
- Fader, J. (2016). "Selling smarter not harder": Life course effects on drug sellers' risk perceptions and management. *International Journal of Drug Policy*, 36, 120-129.

- Fagan, J., & Piquero, A. (2007). Rational choice and developmental influences on recidivism among adolescent felony offenders. *Journal of Empirical Legal Studies*, 4, 715-748.
- Fagan, J., Zimring, F., & Geller, A. (2006). Capital punishment and capital murder: Market share and the deterrent effects of the death penalty. *Texas Law Review*, 84, 1803-1867.
- Farrington, D., Gill, M., Waples, S., & Argomaniz, J. (2007). The effects of closed-circuit television on crime: Meta-analysis of an English national quasi-experimental multi-site evaluation. *Journal of Experimental Criminology*, 3, 21-38.
- Feeley, M., & Simon, J. (1992). The new penology: Notes on the emerging strategy of corrections. *Criminology*, 30, 449-474.
- Feeney, F. (2014). Robbers as decision-makers. In D. Cornish, & R. Clarke (Eds.), *The reasoning criminal: Rational choice perspectives on offending* (pp. 53-71). Transaction Publishers.
- Felson, M. (1998). *Crime and everyday life* (2nd ed.). Pine Forge.
- Felson, M. (2001). The routine activity approach: A very versatile theory of crime. In R. Paternoster, & R. Bachman (Eds.), *Explaining criminals and crime: Essays in contemporary criminological theory* (pp. 43-46). Roxbury Publishing Company.
- Felson, M., & Eckert, M. (2016). *Crime and everyday life* (5th ed.). SAGE Publications.
- FLIR. (n.d.). *Flir skywatch: Standalone mobile surveillance tower [Brochure]*.
- Foster, J., & McChesney, R. (2014, July 1). *Surveillance Capitalism*. Retrieved February 22, 2022, from Montly Review: An Independent Socialist Magazine:
<https://monthlyreview.org/2014/07/01/surveillance-capitalism/>
- Foucault, M. (1977). *Discipline and punish: The birth of the prison*. (A. Sheridan, Trans.). Random House. (Original work published 1975).

- Freilich, J., & Newman, G. (2017, March 29). Situational crime prevention. *Oxford Research Encyclopedia of Criminology*. Retrieved November 28, 2018, from <http://oxfordre.com/criminology/view/10.1093/acrefore/9780190264079.001.0001/acrefore-9780190264079-e-3>.
- Fusch, P., & Ness, L. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report*, 20(9), 1408-1416.
- Galič, M., Timan, T., & Koops, B. (2017). Bentham, Deleuze and beyond: An overview of surveillance theories from the panopticon to participation. *Philosophy & Technology*, 30(1), 9-37.
- Galletta, A. (2013). *Mastering the semi-structured interview and beyond: From research design to analysis and publication*. New York University.
- Gandy, O. (1993). *The panoptic sort: A political economy of personal information*. Westview.
- Garcia, L., & Quek, F. (1997). Qualitative research in information systems: Time to be subjective? In A. Lee, J. Liebenau, & J. DeGross, *Information systems and qualitative research* (pp. 444-465). Springer .
- Geerken, M., & Gove, W. (1975). Deterrence: Some theoretical considerations. *Law & Society Review*, 9(3), 497-513.
- Gerell, M. (2016). Hot spot policing with actively monitored CCTV cameras: Does reduce assaults in public places. *International Criminal Justice Review*, 26(2), 187-201.
- Ghosh, A., Badillo-Urquiola, K., Guha, S., LaViola Jr. , J., & Wisniewski, P. (2018). Safety vs. surveillance: What children have to say about mobile apps for parental control. *CHI '18: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, (pp. 1-14). Retrieved from <https://doi.org/10.1145/3173574.3173698>

- Gibbs, J. (1975). *Crime, punishment, and deterrence*. Elsevier.
- Gill, M., & Hemming, M. (2006). CCTV: Does it work? *Community Safety Journal*, 5(1), 35-36.
- Gill, M., & Loveday, K. (2003). What do offenders think about CCTV? *Crime Prevention and Community Safety: An International Journal*, 5(3), 17-25.
- Gill, M., Bryan, J., & Allen, J. (2007). Public perceptions of CCTV in residential areas: "It is not as good as we thought it would be". *International Criminal Justice Review*, 17(4), 304-324.
- Gill, S. (1995). The global panopticon: The neo-liberal state, economic life, and democratic surveillance. *Alternatives*, 20(1), 1-49.
- Gills, M., & Spriggs, A. (2005). *Assessing the impact of CCTV*. (Home Office Research Study 292). Home Office.
- Gladstone, D. (1980). Writing the history of welfare. *Social and Policy Administration*, 14(1), 59-64.
- Glaser, B. (1965). The constant comparative method of qualitative analysis. *Social Problems*, 12(4), 436-445.
- Glaser, B., & Holton, J. (2004). Remodeling grounded theory. *Forum: Qualitative Social Research*, 5(2). doi:<http://dx.doi.org/10.17169/fqs-5.2.607>
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine Transaction.
- Goold, B., Loader, I., & Thumala, A. (2013). The banality of security: The curious case of surveillance cameras. *The British Journal of Criminology*, 53(6), 977-996.
- Gottfredson, M., & Hirschi, T. (1990). *A general theory of crime*. Stanford University Press.

- Greene, J. (2008). Is mixed methods social inquiry a distinctive methodology. *Journal of Mixed Methods Research*, 2(1), 7-22.
- Greene, J., & Caracelli, V. (2003). Making paradigmatic sense of mixed methods practice. In A. Tashakkori, & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 91-110). SAGE Publications.
- Greene, J., Caracelli, V., & Graham, W. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Education Evaluation and Policy Analysis*, 11(3), 255-274.
- Grogger, J. (1990). The deterrent effect of capital punishment: An analysis of daily homicide counts. *Journal of the American Statistical Association*, 85(410), 295-303.
- Groombridge, N. (2003). Crime control or crime culture TV? *Surveillance and Society*, 1(1), 30-46.
- Guerette, R., & Bowers, K. (2009). Assessing the extent of crime displacement and diffusion of benefits: A review of situational crime prevention evaluations. *Criminology*, 47(4), 1331-1368.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59-82.
- Haggerty, K. (2006). Tear down the walls: On demolishing the panopticon. In D. Lyon (Ed.), *Theorizing surveillance: The panopticon and beyond* (pp. 23-45). Willan Publishing.
- Haggerty, K., & Ericson, R. (2000). The surveillant assemblage. *British Journal of Sociology*, 51(4), 605-622.
- Hannah-Moffat, K. (2013). Actuarial sentencing: An 'unsettled' proposition. *Justice Quarterly*, 30, 270-296.

- Hannah-Moffat, K. (2019). Algorithmic risk governance: Big data analytics, race, and information activism in criminal justice debates. *Theoretical Criminology*, 23(4), 453-470.
- Harcourt, B. (2005). *Against prediction: Sentencing, policing, and punishing in an actuarial age*. Chicago Public Law Working Paper No. 94. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=756945
- Hardoon, D. (2017). *An economy for the 99%*. Retrieved from Oxfam International: https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/bp-economy-for-99-percent-160117-en.pdf
- Harris, M. (2018, October 19). *Video doorbell firm Ring says its devices slash crime-but the evidence looks flimsy*. Retrieved from MIT Technology Review: <https://www.technologyreview.com/2018/10/19/103922/video-doorbell-firm-ring-says-its-devices-slash-crimebut-the-evidence-looks-flimsy/>
- Hollis, M. (2019). Security or surveillance? An examination of CCTV camera usage in the 21st century. *Criminology and Public Policy*, 18, 131-134.
- Holmes, A. (2020). Research positionality - A consideration of its influence and place in qualitative research - A new researcher guide. *Shanlax International Journal of Education*, 8(4), 1-10.
- Holt, T., & Bossler, A. (2008). Examining the applicability of lifestyle-routine activities theory for cybercrime victimization. *Deviant Behavior*, 30(1), 1-25.
- Hoobler, J. (2005). Lip service to multiculturalism: Docile bodies of the modern organization. *Journal of Management Inquiry*, 14(1), 49-56.
- IMDb. (2022a). *Big Brother*. Retrieved from IMDb: <https://www.imdb.com/title/tt0251497/>

IMDb. (2022b). *The Bachelor*. Retrieved from IMDb:

https://www.imdb.com/title/tt0313038/?ref_=fn_al_tt_1

IMDb. (2022c). *Cops*. Retrieved from IMDb:

https://www.imdb.com/title/tt0096563/?ref_=fn_al_tt_1

Ishak, N., & Bakar, A. (2014). Developing sampling frame for case study: Challenges and conditions. *World Journal of Education*, 4(3), 29-35.

Isnard, A. (2001). Can surveillance cameras be successful in preventing crime and controlling anti-social behaviours? [Paper Presentation]. *The Character, Impact, and Prevention of Crime in Regional Australia Conference*. Australian Institute of Criminology.

Johnson, R., & Onwuegbuzie, A. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.

Jonathan-Zamir, T., Mastrofski, S., & Moyal, S. (2015). Measuring procedural justice in police-citizen encounters. *Justice Quarterly*, 32(5), 845-871.

Jurgenson, N. (2010). Review of Ondi Timoner's we live in public. *Surveillance & Society*, 8(3), 374-378.

Kandias, M., Mitrou, L., Stavrou, V., & Gritzalis, D. (2017). Profiling online social networks users as an omniopicon tool. *International Journal of Social Network Mining*, 2(4), 293-313.

Kelling, G., Pate, A., Dieckman, D., & Brown, C. (1974). *The Kansas City preventive patrol experiment: Summary report*. Police Foundation.

Kemshall, H. (2003). *Understanding risk in criminal justice*. Open University Press.

Kennedy, K. (1983). A critical appraisal of criminal deterrence theory. *Dickinson Law Review*, 88, 1-13.

- Kleck, G., & Barnes, J. (2014). Do more police lead to more crime deterrence? *Crime & Delinquency*, 60(5), 716-738.
- Klepper, S., & Nagin, D. (1989). The deterrent effect of perceived certainty and severity of punishment revisited. *Criminology*, 27(4), 721-746.
- Klinger, D., & Bridges, G. (1997). Measurement error in calls-for-service as an indicator of crime. *Criminology*, 35(4), 705-726.
- Klockars, C. (1983). *Thinking about police*. McGraw-Hill.
- Koskela, H. (2003). "Cam era" - The contemporary urban panopticon. *Surveillance and Society*, 1(3), 292-313.
- Kremelberg, D. (2011). *Practical statistics: A quick and easy guide to IBM® SPSS® statistics, STATA, and other statistical software* (1st ed.). Sage.
- Kuper, A., Lingard, L., & Levinson, W. (2008). Critically appraising qualitative research. *British Medical Journal*, 337. doi:10.1136/bmj.a1035
- Kuzel, A. (1992). Sampling in qualitative inquiry. In B. Crabtree, & W. Miller (Eds.), *Doing qualitative research* (pp. 31-44). SAGE Publications.
- La Vigne, N., Lowry, S., Markman, J., & Dwyer, A. (2011). *Evaluating the use of public surveillance cameras for crime control and prevention*. Urban Institute Policy Justice Center.
- Latour, B. (2012). Paris, invisible city: The plasma. *City, Culture and Society*, 3(2), 91-93.
- Layne, T. (2021, August 3). *Escondido police to purchase surveillance tower for large gatherings*. Retrieved from The Coast News Group: <https://thecoastnews.com/escondido-police-to-purchase-surveillance-tower-for-large-gatherings/>

- Leman-Langois, S. (2003). The myoptic panopticon: The social consequences of policing through the lens. *Policing and Society*, 13(1), 43-58.
- Lester, K., & Erez, E. (2000). The Oprah dilemma: The use and abuse of victims. In P. O'Malley (Ed.), *Crime and the criminal justice system in Australia: 2000 and beyond* (pp. 240-258). Allen and Unwin.
- Lewin, K. (1947). Frontiers in group dynamics: Concept, method and reality in social science; social equilibria and social change. *Human Relations*, 1(5), 5-41.
- Lim, H., & Wilcox, P. (2017). Crime-reduction effects of open street CCTV: Conditionality considerations. *Justice Quarterly*, 34(4), 597-626.
- Lum, C., Koper, C., & Telep, C. (2011). The evidence-based policing matrix. *Journal of Experimental Criminology*, 7(1), 3-26.
- Lupton, R., Wilson, A., May, T., Warburton, H., & Turnbull, P. (2002). *A rock and a hard place: Drug markets in deprived neighbourhoods*. (Home Office Research Study 240). Home Office.
- Lynch, J. (1987). Routine activity and victimization at work. *Journal of Quantitative Criminology*, 4(3), 283-300.
- Lyon, D. (1993). An electronic panopticon? A sociological critique of surveillance theory. *The Sociological Review*, 41(3), 653-678.
- Lyon, D. (Ed.). (2003). *Surveillance as social sorting: Privacy, risk and digital discrimination*. Routledge.
- Mandala, M., & Freilich, J. (2018). Disrupting terrorist assassinations through situational crime prevention. *Crime & Delinquency*, 64(12), 1515-1537.

- Mann, S. (2004). Sousveillance inverse surveillance in multimedia imaging. *Multimedia '04: Proceedings of the 12th annual ACM international conference on Multimedia*, (pp. 620-627). Retrieved February 20, 2022, from <https://doi.org/10.1145/1027527.1027673>
- Mann, S., Nolan, J., & Wellman, B. (2003). Sousveillance: Inventing and using wearable computing devices for data collection in surveillance environments. *Surveillance and Society*, 1(3), 331-355.
- March, J. (1978). Bounded rationality, ambiguity, and the engineering of choice. *The Bell Journal of Economics*, 9(2), 587-608.
- Marcum, C., Ricketts, M., & Higgins, G. (2010). Assessing sex experiences of online victimization: An examination of adolescent online behaviors using routine activity theory. *Criminal Justice Review*, 35(4), 412-437.
- Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research?: A review of qualitative interviews in IS research. *Journal of Computer Information Systems*, 54(1), 11-22.
- Martin, J., Desing, R., & Borrego, M. (2022). Positionality statements are just the tip of the iceberg: Moving towards a reflexive process. *Journal of Women and Minorities in Science and Engineering*, 28(4), v-vii.
- Maruna, S. (2010). Mixed method research in criminology: Why not go both ways. In A. Piquero, & D. Weisburd (Eds.), *Handbook of quantitative criminology* (pp. 123-140). Springer.
- Mason, M., & Bucke, T. (2002). Evaluating actions against local drug markets: A "systematic" review of research. *The Police Journal*, 75, 15-30.

- Matczak, P., Wójtowicz, A., Dąbrowski, A., Leitner, M., & Sypion-Dutkowska, N. (2021). Effectiveness of CCTV systems as a crime preventive tool: Evidence from eight Polish cities. *International Journal of Comparative and Applied Criminal Justice*. doi:<https://doi.org/10.1080/01924036.2021.1976237>
- Mathiesen, T. (1997). The viewer society: Michel Foucault's "Panopticon" revisited. *Theoretical Criminology*, 1(2), 215-234.
- Matsueda, R., Huizinga, D., & Kreager, D. (2006). Deterring delinquents: A rational choice model of theft and violence. *American Sociological Review*, 71, 95-122.
- Mawson, A., Lapsley, P., Hoffman, A., & Guignard, J. (2002). Preventing lethal violence in schools: The case for entry-based weapons screening. *Journal of Health Politics, Policy and Law*, 27(2), 243-260.
- Maxfield, M., & Babbie, E. (2016). *Basics of research methods for criminal justice & criminology* (4th ed.). Cengage Learning.
- Meier, R., & Johnson, W. (1977). Deterrence as social control: The legal and extralegal production of conformity. *American Sociological Review*, 42(2), 292-304.
- Mendes, S. (2004). Certainty, severity, and their relative deterrent effects: Questioning the implications of the role of risk in criminal deterrence policy. *The Policy Studies Journal*, 32(1), 59-74.
- Minnaar, A. (2007). The implementation and impact of crime prevention / crime control open street closed-circuit television surveillance in South African central business districts. *Surveillance & Society*, 4(3), 174-207.

- Mitrou, L., Kandias, M., Stavrou, V., & Gritzalis, D. (2014, April). Social media profiling: A Panopticon or Omniopicon tool? *In Proceedings of the 6th Conference of the Surveillance Studies Network*.
- Monahan, T. (2009). Identity theft vulnerability: Neoliberal governance through crime construction. *Theoretical Criminology*, 13(2), 155-176.
- Moon, T., Heo, S., Lee, S., Leem, Y., & Nam, K. (2015). An analysis on the appropriateness and effectiveness of CCTV location for crime prevention. *International Scholarly and Scientific Research & Innovation*, 9(3), 836-843.
- Morse, J. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, 40(1), 120-123.
- Morse, J. (1993). Designing funded qualitative research. In N. Denzin, & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 220-235). SAGE Publications.
- Moskos, P. (2008). *Cop in the hood: My year policing Baltimore's eastern district*. Princeton University Press.
- Mustaine, E., & Tewksbury, R. (1998). Predicting risks of larceny theft victimization: A routine activity analysis using refined lifestyle measures. *Criminology*, 36(4), 829-858.
- Mustaine, E., & Tewksbury, R. (2002). Sexual assault of college women: A feminist interpretation of a routine activities analysis. *Criminal Justice Review*, 27(1), 89-123.
- Nagin, D. (2013). Deterrence in the twenty first century. *Crime and Justice*, 42(1), 199-263.
- Nagin, D. (2018). Deterrent effects of the certainty and severity of punishment. In D. Nagin, F. Cullen, & C. Jonson (Eds.), *Deterrence, choice, and crime* (Vol. 23, pp. 157-186). Routledge.

- Norris, C., & McCahill, M. (2006). CCTV: Beyond penal modernism? *British Journal of Criminology*, 46(1), 97-118.
- Novak, K., Fox, A., Carr, C., & Spade, D. (2016). The efficacy of foot patrol in violent places. *Journal of Experimental Criminology*, 12, 465-475.
- Ochs, E. (1997). Narrative. In T. van Dijk (Ed.), *Discourse studies: a multidisciplinary introduction* (Vol. 1, pp. 185-207). Sage.
- O'Connor, C., & Joffe, H. (2020). Intercoder reliability in qualitative research: debates and practical guidelines. *International Journal of Qualitative Methods*, 19, 1-13.
- O'Grady, W., Asbridge, M., & Abernathy, T. (2000). Illegal tobacco sales to youth: A view from rational choice theory. *Canadian Journal of Criminology*, 42(1), 1-20.
- O'Malley, P. (2009). *Risk, crime, and prudentialism revisited*. Legal Studies Research Paper No. 09/122. Retrieved from <http://ssrn.com/abstract=1492477>
- O'Meara, K. (2011). Inside the Panopticon: Studying academic reward systems. In J. Smart, & M. Paulsen (Eds.), *Higher education: Handbook of theory and research* (Vol. 26, pp. 161-220). Springer.
- O'Reilly, M., & Parker, N. (2012). Unsatisfactory saturation: A critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research*, 13(2), 190-197.
- Örnek, F. (2007). Evaluation novelty in modeling-based and interactive engagement instruction. *Eurasia Journal of Mathematics, Science & Technology*, 3(3), 213-237.
- Painter, K., & Farrington, D. (2001). The financial benefits of improved street lighting, based on crime prevention. *Lighting Research and Technology*, 33(1), 3-10.

- Park, M., Perez, N., Jennings, W., & Gover, A. (2016). A preliminary examination of the role of deterrence and target hardening on future recidivism risk among burglars in South Korea. *Security Journal*, 30(3), 903-921.
- Paternoster, R. (1987). The deterrent effect of the perceived certainty and severity of punishment: A review of evidence and issues. *Justice Quarterly*, 4, 173-217.
- Paternoster, R. (2010). How much do we really know about criminal deterrence? *The Journal of Law & Criminology*, 100(3), 765-824.
- Paternoster, R., & Bachman, R. (2001). Classical and neue classical schools of criminology: Deterrence, rational choice, and situational theories of crime. In R. Paternoster, & R. Bachman (Eds.), *Explaining criminals and crime: Essays in contemporary criminological theory* (pp. 11-22). Roxbury Publishing Company.
- Paternoster, R., & Piquero, A. (1995). Reconceptualizing deterrence: An empirical test of personal and vicarious experiences. *Journal of Research in Crime and Delinquency*, 32, 251-286.
- Paternoster, R., Jaynes, C., & Wilson, T. (2017). Rational choice theory and the interest in the "fortune of others". *Journal of Research in Crime and Delinquency*, 54(6), 847-868.
- Pathinayake, A. (2018). Should we deter against general deterrence. *Wake Forest Journal of Law and Policy*, 9(1), 63-116.
- Pathinayake, A. (2019). Contextualizing specific deterrence in an era of mass. *Connecticut Public Interest Law Journal*, 18(2), 357-390.
- Patton, M. (1990). *Qualitative evaluation and research methods* (2nd ed.). Thousand Oaks, CA: Sage.

- Patton, P. (1994). Metamorpho-logic: Bodies and powers in a thousand plateaus. *Journal of the British Society for Phenomenology*, 25(2), 157-169.
- Pease, K. (1999). A review of street lighting evaluations: Crime reduction effects. *Crime Prevention Studies*, 10, 47-76.
- Pierce, J. (2019). Smart home security cameras and shifting lines of creepiness: A design-led inquiry. *CHI 19' Conference on Human Factors in Computing Systems Paper No. 45*, (pp. 1-14). doi:<https://doi.org/10.1145/3290605.3300275>
- Piquero, A., & Tibbets, S. (1996). Specifying the direct and indirect of low self-control and situational factors in offenders' decision-making: Toward a more complete model of rational offending. *Justice Quarterly*, 13, 481-510.
- Piza, E., Caplan, J., & Kennedy, L. (2014). Is the punishment more certain? An analysis of CCTV detections and enforcement. *Justice Quarterly*, 31(6), 1015-1043.
- Piza, E., Caplan, J., & Kennedy, L. (2017). CCTV as an early tool for police intervention: Preliminary lessons from nine case studies. *Security Journal*, 30(1), 247-265.
- Piza, E., Walsh, B., Farrington, D., & Thomas, A. (2019). CCTV surveillance for crime prevention; A 40-year systematic review with meta-analysis. *Criminology and Public Policy*, 18, 135-159.
- Pogarsky, G., & Piquero, A. (2003). Can punishment encourage offending? Investigating the "resetting" effect. *Journal of Research in Crime and Delinquency*, 40(1), 95-120.
- Pogarsky, G., Piquero, A., & Paternoster, R. (2004). Modeling change in perceptions about sanction threats: The neglected linkage in deterrence theory. *Journal of Quantitative Criminology*, 20, 343-369.

- Pomerantz, A., & Fehr, B. (1997). Conversation analysis: an approach to the study of social action as sense making practices. In T. van Dijk (Ed.), *Discourse studies: An multidisciplinary introduction* (Vol. 1, pp. 64-91). Sage.
- Potter, W., & Levine-Donnerstein, D. (1999). Rethinking validity and reliability in content analysis. *Journal of Applied Communication Research*, 27, 258-284.
- Poyner, B. (1988). Video cameras and bus vandalism. *Journal of Security Administration*, 11(1), 45-51.
- Poyner, B. (1991). Situational crime prevention in two parking facilities. *Security Journal*, 2(1), 96-101.
- Pratt, T. (2008). Rational choice theory, crime control policy, and criminological relevance. *Criminology and Public Policy*, 7(1), 43-53.
- Pratt, T., & Francis, C. (2005). Assessing macro-level predictors and theories of crime: A meta-analysis. *Crime & Justice*, 32, 373-450.
- Pratt, T., Cullen, F., Blevins, K., Daigle, L., & Madensen, T. (2006). The empirical status of deterrence: A meta-analysis. In F. Cullen, J. Wright, & K. Blevins (Eds.), *Taking Stock: The Status of Criminological Theory* (Vol. 15, pp. 367-395). Transaction.
- Ratcliffe, J. (2006). *Video surveillance of public places*. (Report No. 4). Problem-Oriented Guides for Police Response Guides Series.
- Reaves, B. (2015). *Local police departments, 2013: Equipment and technology*. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.
- Reid, A., & Andresen, M. (2012). The impact of closed-circuit television in a car park on the fear of crime: Evidence from a victimization survey. *Crime Prevention and Community Safety*, 14(4), 293-316.

- Reiman, J. (1995). Driving to the Panopticon: A philosophical exploration of the risks to privacy posed by the highway technology of the future. *Santa Clara High Technology Law Journal*, 11(1), 27-44.
- Rengeling, H. (2012). Tackling Somali piracy. *Trends in Organized Crime*, 15, 180-197.
- Repetto, T. (1976). Crime prevention and the displacement phenomenon. *Crime & Delinquency*, 22(2), 166-177.
- Reyns, B., Henson, B., Fisher, B., Fox, K., & Nobles, M. (2016). A gendered lifestyle-routine activity approach to explaining stalking victimization in Canada. *Journal of Interpersonal Violence*, 31(9), 1719-1743.
- Roberts, S., Bareket-Shavit, C., Dollins, F., Goldie, P., & Mortenson, E. (2020). Racial inequality in psychological research: Trends of the past and recommendations for the future. *Perspectives on Psychological Science*, 15(6), 1295-1309.
- Ross, H. (1984). Social control through deterrence: drinking-and-driving laws. *Annual Review of Sociology*, 10, 21-35.
- Rubin, H., & Rubin, I. (2005). *Qualitative interviewing: The art of hearing data* (2nd ed.). Sage Publications.
- Saldaña, J. (2016). *The coding manual for qualitative researchers*. Sage.
- Salkind, N. (2017). *Statistics for people who (think they) hate statistics* (6th ed.). SAGE Publications.
- Sampson, S., Piquero, N., & Paternoster, R. (2012). Rationality and corporate offending decisions. In A. Piquero, & S. Tibbets (Eds.), *Rational choice and criminal behavior: Recent research and future challenges* (pp. 25-39). Routledge.

- Sandilands, D. (2014). Bivariate analysis. In A. Michalos (Ed.), *Encyclopedia of quality of life and well-being research*. Springer, Dordrecht. Retrieved from https://doi.org/10.1007/978-94-007-0753-5_222
- Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: Exploring its conceptualization and operationalization. *Quality and Quantity*, 52, 1892-1907.
- Schemer, H. (2012). Doral police department 12-106 [FLIR systems purchase order]. Retrieved from <https://doral.legistar.com/gateway.aspx?M=F&ID=f90df5d5-b0e7-4b82-adcd-94d033c2157d.pdf&From=Granicus>
- Schwartz, M., DeKeseredy, W., Tait, D., & Alvi, S. (2001). Male peer support and a feminist routine activities theory: Understanding sexual assault on the college campus. *Justice Quarterly*, 18(3), 623-650.
- Schwartz, R., & Orleans, S. (1967). On legal sanctions. *University of Chicago Law Review*, 34(2), 274-300.
- Shaw, C. (1966). *The jack-roller: A delinquent boy's own story*. University of Chicago Press.
- Sherman, L. (1990). Police crackdowns: Initial and residual deterrence. *Crime and Justice*, 12, 1-48.
- Sherman, L. (1992). Attacking crime: Police and crime control. In M. Tonry, & N. Morris (Eds.), *Modern policing: Crime and justice* (pp. 159-230). University of Chicago Press.
- Sherman, L., & Rogan, D. (1995). Deterrent effects of police raids on crack houses: A randomized controlled experiment. *Justice Quarterly*, 12, 755-781.
- Sherman, L., & Weisburd, D. (1995). General deterrent effects of police patrol in crime hot spots: A randomized, controlled trial. *Justice Quarterly*, 12(4), 625-648.

- Sherman, L., Gartin, P., & Buerger, M. (1989). Hot spots of predatory crime: routine activities and the criminology of place. *Criminology*, 27(1), 27-56.
- Sherman, L., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., & Bushway, S. (1997). *Preventing crime: What works, what doesn't, what's promising: Report to the United States Congress*. US Government Printing Office.
- Simon, H. (1955). A behavior model of rational choice. *The Quarterly Journal of Economics*, 69(1), 99-118.
- Singleton, M. (2012, February 22). *Brooklyn bureau: NYPD towers may defuse cop community friction*. Retrieved from City Limits: <https://citylimits.org/2012/02/22/brooklyn-bureau-nypd-towers-may-defuse-cop-community-friction/>
- Skogan, W. (2019). The future of CCTV. *Criminology and Public Policy*, 18, 161-166.
- Skolnick, J., & Bayley, D. (1986). *The new blue line*. Free Press.
- Smith, G. (2004). Behind the screens: Examining constructions of deviance and informal practices among CCTV control room operators in UK. *Surveillance and Society*, 2(2/3), 376-395.
- Sorg, E., Haberman, C., Ratcliffe, J., & Groff, E. (2013). Foot patrol in violent crime hot spots: The longitudinal impact of deterrence and posttreatment effects of displacement. *Criminology*, 51(1), 65-102.
- Spelman, W. (1995). Criminal careers of public places. *Crime and Place*, 4, 115-144.
- Stafford, M., & Warr, M. (1993). A reconceptualization of general and specific deterrence. *Journal of Research in Crime and Delinquency*, 30(2), 123-135.
- Stanley, J., & Steinhardt, B. (2003). *Bigger monster, weaker chains: The growth of an American surveillance society*. American Civil Liberties Union.

- Staples, W. (2014). *Everyday surveillance: Vigilance and visibility in postmodern life* (2nd ed.). Rowman & Littlefield.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Sage.
- Sweeny, R. (2004). The Pedagopticon: Other eyes in the 21st century classroom. *Journal of Social Theory in Art Education*, 28(1), 30-41.
- Tash, J. (2021, July 25). Escondido police get \$258,000 grant for mobile surveillance tower. *The San Diego Union-Tribune*. Retrieved from San Diego Union-Tribune: <https://www.sandiegouniontribune.com/communities/north-county/escondido/story/2021-07-25/escondido-police>
- Teddlie, C., & Tashakkori, A. (2010). Overview of contemporary issues in mixed methods research. In C. Teddlie, & A. Tashakkori (Eds.), *SAGE handbook of mixed methods in social & behavioral research* (4th ed., pp. 1-44). SAGE Publications.
- Tewksbury, R., & Mustaine, E. (2001). Lifestyle factors associated with the sexual assault of men: A routine activity theory analysis. *The Journal of Men's Studies*, 9(2), 153-182.
- Tewksbury, R., DeMichele, M., & Miller, J. (2005). Methodological orientations of articles appearing in criminal justice's top journals: Who publishes what and where. *Journal of Criminal Justice Education*, 16(2), 265-279.
- Thompson, C., & Fisher, B. (1996). Predicting household victimization utilizing a multi-level routine activity approach. *Journal of Crime and Justice*, 19(2), 49-66.
- Tilley, N. (1993). *Understanding car parks, crime, and CCTV: Evaluation lessons from safer cities*. (Report No. 42). Crime Prevention Unit Series .

- Timan, T., Galič, M., & Koops, B. (2017). Surveillance theory and its implications for law. In R. Brownsword, E. Scotford, & K. Yeung (Eds.), *The Oxford handbook for the law and regulation of technology* (pp. 731-753). Oxford University Press. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3098182
- Tittle, C. (1977). Sanction fear and the maintenance of social order. *Social Forces*, 53(3), 579-596.
- Tonry, M. (2008). Learning from the limitations of deterrence research. *Crime and Justice*, 37(1), 279-311.
- Trahan, A., & Stewart, D. (2013). Toward a pragmatic framework for mixed methods research in criminal justice and criminology. *Applied Psychology in Criminal Justice*, 9(1), 59-74.
- Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, 185(4157), 1124-1131.
- United States Department of Justice-Federal Bureau of Investigation. (2010). *Crime in the United States 2010*. Retrieved from FBI: UCR: <https://ucr.fbi.gov/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/property-crime#:~:text=Definition,of%20force%20against%20the%20victims>
- United States Department of Justice-Federal Bureau of Investigation. (2011). *Crime in the United States 2011*. Retrieved from FBI: UCR: <https://ucr.fbi.gov/crime-in-the-u.s/2011/crime-in-the-u.s.-2011/violent-crime/violent-crime#:~:text=Definition,force%20or%20threat%20of%20force>
- United States Department of Justice-Federal Bureau of Investigation. (2017). *2017 Crime in the United States*. Retrieved from FBI: UCR: <https://ucr.fbi.gov/crime-in-the-u.s/2017/crime-in-the-u.s.-2017/tables/table-74>

- United States Department of Justice-Federal Bureau of Investigation. (2019). *Crimes against persons, property, and society*. Retrieved from NIBRS, 2018:
https://ucr.fbi.gov/nibrs/2018/resource-pages/crimes_against_persons_property_and_society-2018.pdf
- Ur, B., Jung, J., & Schechter, S. (2014). Intruders versus intrusiveness: Teens' and parents' perspectives on home-entryway surveillance. *UbiComp '14: Proceedings of the 2014 ACM International Joint Conference on Pervasive and Ubiquitous Computing*, (pp. 129-139). Retrieved from <https://doi.org/10.1145/2632048.2632107>
- Wacquant, L. (2001). The penalisation of poverty and the rise of neo-liberalism. *European Journal on Criminal Policy and Research*, 9, 401-412.
- Walker, D., & Myrick, F. (2006). Grounded theory: An exploration of process and procedure. *Qualitative Health Research*, 16(4), 549-559.
- Walsh, D. (2014). Victim selection procedures among economic criminals: The rational choice perspective. In D. Cornish, & R. Clarke (Eds.), *The reasoning criminal: Rational choice perspectives on offending* (pp. 39-52). Transaction Publishers.
- Waples, S., & Gill, M. (2006). The effectiveness of redeployable CCTV. *Crime Prevention and Community Safety*, 8, 1-16.
- Waples, S., Gill, M., & Fisher, P. (2009). Does CCTV displace crime? *Criminology & Criminal Justice*, 9(2), 207-224.
- Warner, B., & Pierce, G. (1993). Reexamining social disorganization theory using calls for police as a measure of crime. *Criminology*, 31(4), 493-518.

- Watson, B., Siskind, V., Fleiter, J., Watson, A., & Soole, D. (2015). Assessing specific deterrence effects of increased speeding penalties using four measures of recidivism. *Accident Analysis and Prevention*, 84, 27-37.
- Webster, F., & Robins, K. (1986). *Information technology: A Luddite analysis*. Ablex.
- Weisburd, D., & Green, L. (1995). Policing drug hot spots: The jersey city drug market anaylsis experiment. *Justice Quarterly*, 12(4), 711-735.
- Weisburd, D., Bushway, S., Lum, C., & Yang, S. (2004). Trajectories of crime at places: A longitudinal study of street segments in the city of Seattle. *Criminology*, 42(2), 283-321.
- Weisburd, D., Wyckoff, L., Ready, J., Eck, J., Hinkle, J., & Gajewski, F. (2006). Does crime just move around the corner - a controlled study of spatial displacement and diffusion of crime control benefits. *Criminology*, 44(3), 549-592.
- Welsh, B., & Farrington, D. (2004). Surveillance for crime prevention in public space: Results and policy choices in Britain and America. *Criminology and Public Policy*, 3(3), 597-526.
- Welsh, B., & Farrington, D. (2009). Public area CCTV and crime prevention: An updated systematic review and meta-analysis. *Justice Quarterly*, 26(4), 716-745.
- Whitaker, R. (2000). *The end of privacy: How total surveillance is becoming a reality*. The New Press.
- Wikström, P. (2007). Deterrence and deterrence experiences-Preventing crime through the threat of punishment. In S. Shoham, O. Beck, & M. Kett (Eds.), *International Handbook of Penology and Criminal Justice* (pp. 345-378). Taylor and Francis.
- Wilcox, P., Madensen, T., & Tillyer, M. (2007). Guardianship in context: Implications for burglary victimization risk and prevention. *Criminology*, 45(4), 771-801.

- Wilkes, N., Anderson, V., Johnson, C., & Bedell, L. (2021). Mixed methods research in criminology and criminal justice: A systematic review. *American Journal of Criminal Justice*. Retrieved from <https://doi.org/10.1007/s12103-020-09593-7>
- Williams, C. (2003). Police surveillance and the emergence of CCTV in the 1960s. *Crime Prevention and Community Safety: An International Journal*, 27-37.
- Williams, K., & Hawkins, R. (1986). Perceptual research on general deterrence: A critical review. *Law & Society Review*, 20(4), 545-572.
- Wilmot, A. (2005). *Designing sampling strategies for social qualitative research: with particular reference to the Office for National Statistics' Qualitative Respondent Register*. Retrieved from Office of National Statistics, UK:
<http://wwwn.cdc.gov/qbank/QUest/2005/Paper23.pdf>
- Wortley, R. (2001). A classification of techniques for controlling situational precipitators of crime. *Security Journal*, 14(4), 63-82.
- Wortley, R. (2010). Critiques of situational crime prevention. In B. Fisher, & S. Lab (Eds.), *Encyclopedia of victimology and crime prevention* (pp. 284-287). Sage.
- Yardley, L. (2000). Dilemmas in qualitative health research. *Psychology and Health*, 15, 215-228.
- Završnik, A. (2021). Algorithmic justice: Algorithms and big data in criminal justice settings. *European Journal of Criminology*, 18(5), 623-642.
- Zimmer, M. (2009). Privacy on the roads: Mobility, vehicle safety communication technologies, and the contextual integrity of personal information flows. In D. Matheson (Ed.), *Contours of privacy* (pp. 219-240). Cambridge Scholars Publishing.

Zuboff, S. (2015). Big other: surveillance capitalism and the prospects of an information civilization. *The Journal of Information Technology*, 30, 75-89.

Zuboff, S. (2016, May 3). *The secrets of surveillance capitalism*. Retrieved February 19, 2022, from Frankfurter Allgemeine: <https://www.faz.net/aktuell/feuilleton/debatten/the-digital-debate/shoshana-zuboff-secrets-of-surveillance-capitalism-14103616.html>

Appendix A

Additional Applicable Theories

Rational Choice Theory

Rational choice and its applicability to crime reduction is a cornerstone of criminological study. Cornish and Clarke (1985; 2014) posit the idea that offenders seek benefits for themselves with their criminal activity and that this process involves a rational level of decision making, at least to the extent that time, ability, and pertinent information are available. The underlying premise of rational choice theory is the idea that an offender chooses to commit a crime for expected benefits. Criminals, would-be criminals, as well as people who do not commit criminal acts, are held to be decisionmakers who evaluate the best course of action to fulfill their own self-interests. Furthermore, the theory outlines conditions for specific crimes to occur, in particular, emphasizing the role of opportunities in causation (Cornish & Clarke, 2005). Such opportunities include a need for money, two burglars serendipitously running into each other, or a timely piece of information that there is a suitable target available (Cornish & Clarke, 2017).

Understanding rational choice from a criminal perspective is essential for policymaking to succeed in deterring criminal activity. In rational choice theory offenders are perceived to evaluate the benefits of their illegal actions against the consequences of same. The aim of deterrence then must be to clearly outweigh any of those benefits that can be reaped by committing the crime in the first place. Beccaria (1764/1986) states, “That gravity-like force impels us to seek our own well-being can be restrained only to the degree that obstacles are established in opposition to it” (p.14). Such opposition can be seen in the concept of deterrence.

Numerous studies have demonstrated a rational level of decision-making is utilized by offenders during the commission of their offending. In examining the perceptions of expert and

novice shoplifters, Carmel-Gilfilen (2013), focuses on their consideration of deterrents present in the store, as well as facilitators that aided in their shoplifting. By doing so she seeks to highlight the use of rational choice in offending. She demonstrates that expert shoplifters, more than novice offenders, appear to note facilitators such as employee positioning, store layout, and natural surveillance. Novice offenders on the other hand focused mainly on deterrents such as formal surveillance and security tagging. Indeed, the experts took note of deterrent factors, but then actually discussed ways to circumvent them rather than letting them be impediments. Leading back to the rational choice perspective one can see how individuals are planning, even if minimally at the novice level, as well as weighing the benefits of stealing an item to the cost, potential apprehension, and arrest.

Walsh (2014) examining victim selection procedures among individuals committing commercial burglary and robbery found that assessment and planning are components of these crimes. Walsh calls it “the window of vulnerability”, specifically the component that is often overlooked by unfortunate victims (p. 45). Criminals looking for this window demonstrate a rational process as it determines the method of the crime, the *modus operandi*, and even the day and time of when the offense is to be committed. Rationality is clearly present, albeit time-restricted or limited. In particular, these limited or bounded constraints, stem from the offender’s own processing capability and his/her/their management and utilization of memory (March, 1978; Simon, 1957). As noted by Cornish and Clarke (2014) these biological limitations strongly limit human rationality and thus the decision-making process.

Feeney (2014), in examining interviews with convicted robbers, seeks to understand their thoughts on deciding to commit robbery, as well as any planning involved. An additional focus on the robbers’ decision-making process relating to means, weapon, force, and even the

continuance of such illegal activity is also incorporated. The study found that contrary to popular belief not all robberies are committed for economic reasons, that in fact some robberies are carried out to relieve boredom or out of anger, while others occurred when the offender was interrupted during a burglary (Feeney, 2014). Additionally, Feeney also noted that robbers put little effort into planning and have minimal thought of apprehension. That being said, Feeney notes that the underlying cause for these crimes was the offenders' desires, such as money, excitement, or revenge, which could be satisfied by robbery. Referring back to the theory of deterrence, would-be criminals look at the proportionality of the rewards of crime to the costs (Nagin, 2013). In Feeney's study those that wanted money sought it for such things as drugs, food, and shelter. The weighing of not having the means to feed one's family against the legal sanctions of robbery makes it a very rational choice to proceed or desist. Additionally, if desistance is to be a societal goal the cost must eclipse that of moral obligations and egoism.

Furthermore, as the nature of criminal behavior is intrinsically complex rational choice theorists have had to go beyond somewhat simplistic cost-benefit analysis that is at the core of rational choice theory (Pratt, 2008). Specifically, researchers have expanded their focus to understand how a myriad of personal and contextual factors shape an offenders' perceptions of their own costs and benefit analysis of committing a criminal act (Pratt, 2008). Such individual and environmental factors that have been studied include: individual levels of impulsivity and self-control (Piquero & Tibbets, 1996), both personal and vicarious experiences with crime and punishment (Paternoster & Piquero, 1995; Stafford & Warr, 1993), attachments to prosocial institutions (Paternoster, 1987), perceptions of the costs of punishment, particularly those of shame or loss of respect, that are not legal-based sanctions (Braithwaite, 1989; Tittle, 1977),

concern for others (Paternoster et al., 2017), and environmental restrictions for certain forms of criminal opportunities (Pratt et al., 2006).

While Beccaria (1764/1986) did not specifically address rational choice and related policy implications the following statement by him is quite applicable. “In order that any punishment should not be an act of violence committed by one person or many against a private citizen; it is essential that it should be public, prompt, [and] necessary...” (p. 81). For deterrence to be successful it must make the offender recognize the potential costs and likelihood of swift apprehension, conviction, and punishment, and these must outweigh any possible gain no matter how significant that gain may seem. Paternoster and Bachman (2001) offer a simple adjustment that would aid in a would-be offender choosing to not offend. Their example demonstrated how the removal of posters and signage from convenience store windows, thereby keeping the windows completely clear and transparent, would deter would-be robbers. Potential robbers would refrain from robbing the store with the clutter-free windows as a passersby would be able to see the robbery inside, thus increasing the likelihood of the offender then being apprehended. The outcome of this potential crime would leave the offender rating the cost and apprehension greater than the benefit of the crime committed.

Critiques and Limitations of Rational Choice Theory

While the theoretical underpinnings of rational choice have been applied to the analysis of illegal sales of tobacco products to youth (O’Grady et al., 2000), corporate crime (Sampson et al., 2012), community response to youth and gang violence (Decker & Curry, 2002), as well as the numerous areas of study previously mentioned, its empirical value in predicting crime is weak (Pratt & Cullen, 2005). Furthermore, a criticism of rational choice theory is that it aims to explain an individual’s behavior from a wholly rational perspective (Blau, 1997). Blau (1997)

notes this criticism stems from the argument that rational choice theory overlooks behavior that is nonrational and influenced by emotion and moral beliefs. Along the same vein Boudon (1998) argues that rational choice theory cannot be universally applied to all research settings and problems. These limitations and critiques will be considered in the application of rational choice theory to the analysis of SkyWatch towers as a deterrent apparatus.

Rational Choice Theory and SkyWatch Towers

The emphasis on a cost-benefit analysis and how offenders seek benefits for themselves with their criminal activity is the core component of rational choice theory (Cornish & Clarke, 1985; 2014). This process is argued to involve a rational level of decision making, at least to the extent that time, a required skillset, and relevant information is available (Cornish & Clarke, 1985; 2014). When a SkyWatch tower is deployed some level of police presence can be assumed to be inferred by individuals in the area. To a would-be offender the possibility of an increased likelihood of apprehension would seem to be relevant in the decision-making process of whether to commit a crime or not. The potential offender would need to weigh the benefits received, say from breaking into an automobile and absconding with property to sell, versus the cost of arrest and the resulting sanctions such as fines or incarceration. Similar to the removal of signage in convenience store windows (Paternoster & Bachman, 2001), a SkyWatch tower with 360-degree viewing capability may afford an increased perception of apprehension and therefore a cost not worth the gains.

Situational Crime Prevention

A significant amount of criminology's focus is on those individuals committing criminal acts. In situational crime prevention (SCP) Clarke (1983; 1995; 1997) offers a new perspective, stemming from the analysis of conditions that give rise to certain types of offenses, particularly

focusing on the settings for crime. SCP is not meant to detect crime or punish offenders, rather it aims to deter crime by subtly altering surroundings to make criminal acts less appealing (Clarke, 1997). Products or services offered by hospitals, schools, shopping malls, bars, or even parking lots can offer opportunities for a wide variety of crimes to occur (Clarke, 1997). SCP directs the responsibility of crime prevention to these public and private entities, rather than the police, arguing they are better suited to make managerial and environmental changes that can reduce crime (Freilich & Newman, 2017). SCP is composed of three definable elements: theoretical framework, standard methodology for addressing crime problems, and a set of opportunity-reducing methods (Clarke, 1995).

The first principle of SCP, structured theoretical support, is provided by rational choice and routine activities perspectives. Rational choice theory promotes the idea that offenders are in pursuit of garnering benefits for themselves with their criminal activity. This process involves a rational level of decision making, at least to the extent that time, ability, and pertinent information are available (Cornish & Clarke, 1985; 2014). The underlying premise of rational choice theory is the idea that an offender chooses to commit a crime for the benefits that can be received (Cornish & Clarke, 1985; 2014). One of the most important contributions of rational choice to SCP is the recognition of decision processes and how they vary significantly among offenses (Clarke, 1997). Clarke (1997) states, “to ignore these differences, and the situational contingences associated with them, may be to reduce significantly the scope for intervention” (p. 10).

In the routine activities approach, Cohen and Felson (1979) suggest that for criminal offenses to occur three critical elements must be present (Felson, 2001). These three elements are a likely offender, a suitable crime target, and the absence of a capable guardian against the crime

(Felson, 2001). Crime prevention strategies have been developed by focusing on routine activity's three critical components of crime and their convergence. A prominent technique of SCP, deflecting offenders, is premised on this idea of convergence (Clarke, 1992).

SCP's standard research methodology, the second component of SCP, is based on a form of the action research model (Clarke, 1997). The action research model incorporates practitioners and researchers defining a problem, identifying possible solutions, evaluation of the results, and repetition of the process until success is achieved (Clarke, 1997; Lewin, 1947). The action research model is reflected in the five stages of SCP's methodology which are: collection of data to determine the specific crime problem; evaluation of the situational conditions that facilitate the criminal offense; means of preventing these opportunities which permit the crime to occur; implementation of the solution; and analysis of the results (Clarke, 1997; Gladstone, 1980).

The third, and final component of SCP, is opportunity-reducing techniques. Upon SCP's inception there were eight such techniques incorporated, however as SCP evolved that total has grown to 25 (Freilich & Newman, 2017). The original techniques served to increase the risks and difficulties of crime while reducing its rewards; the three key elements prescribed by rational choice theory and SCP's underlying principles (Clark, 1997). Clarke and Homel (1997) recognized a fourth purpose of SCP, also implicit in rational choice, which is to remove excuses for crime. The fifth, and last, purpose of SCP was added by Cornish and Clarke in 2003. Reducing provocations was added to combat criticism that situational aspects of the social and physical environments could lead to criminal offenses (Freilich & Newman, 2017).

The five purposes of SCP are associated with 25 crime prevention techniques. It was noted by Clarke (1997) that some measures could serve more than one purpose so overlap

between some categories is possible. Freilich and Newman (2017) outline the 25 techniques of SCP based on their purposes as:

Increasing the effort: target hardening, access control, entry/exit screening, deflect offenders, and control tools/weapons. Increasing the risk: extend guardianship, assist natural surveillance, reduce anonymity, utilize place managers, and strengthen formal surveillance. Reduce the rewards: conceal targets, remove targets, identify property, disrupt markets, and deny benefits. Reduce provocations: reduce frustrations and stress, set rules, reduce emotional arousal, neutralize peer pressure, and discourage imitation. Remove excuses: avoid disputes, post instructions, alert conscience, assist compliance, and control drugs and alcohol. (pp. 9-10)

Numerous empirical studies have been performed assessing the use of each of these techniques through a SCP perspective. In attempting to remedy a problem, review of these studies is critical in determining which intervention technique has been successful in addressing similar offenses (Clarke & Eck, 2005).

For example, in employing target hardening, locks, safes, or reinforced material are employed to hinder an offender's criminal opportunities (Clark, 1997). To combat and deter Somali piracy, ship owners now employ physical barriers, such as safe rooms for crew members, so that pirates must expend more effort to achieve their goals (Rengelink, 2012). Other target-hardening measures are seen with bullet-proof vests and bullet resistant motor vehicles that aim to reduce terrorist rewards (Clarke & Newman, 2006). The situational technique of deflecting offenders, supported by the routine activities approach, has demonstrated success by keeping offenders away from crime targets (Clarke, 1997). Effective strategies have been documented with street closures, parking restrictions, and barriers to create distance between assassination

targets and terrorists (Mandala & Freilich, 2018). Another SCP technique, entry screening, has been used to reduce the risk of lethal violence in schools with entry-based weapon detection systems (Mawson et al., 2002).

Criticisms and Limitations of Situational Crime Prevention

While all the above are practical applications of SCP, there are policy implications, such as neoliberal crime control, that also must be noted. “Neoliberalism represents a complex, multifaceted project of socio-spatial transformation... [that promotes] the building of free trade zones, privatized spaces for high earner consumption, the unleashing of zero tolerance initiatives and targeted surveillance” (Brenner & Theodore, 2002, p.363). Coleman (2002) notes, an important aspect of neoliberal strategies are business improvement districts that are “publicly unaccountable bodies set up to police and monitor the debris of neoliberal urban visions – litter, graffiti, the homeless, and prohibited street trading” (p. 23). Neoliberal crime control places the responsibility of managing the environment, particularly with use of SCP, on the community. This can potentially reduce a sense of community and even introduce an element of victim blaming (Becker et al., 2021; Lester & Erez, 2000; O’Malley, 2009). Additionally, even at the individual level, citizens are expected to assume responsibility for police and certain social service functions (Monahan, 2009). The applicability of situational crime prevention is much broader than one can imagine can be adopted at both the micro and macro levels.

An additional criticism of situational crime prevention is its diversion from mainstream criminological principles, those that focus on the social and psychological forces that drive offenders, to instead concentrate on the immediate surroundings and circumstances in which criminal acts occur (Wortley, 2010). While SCP relies on the target-hardening of the environment it is criticized for not addressing the underlying reasons an individual offends

(Wortley, 2010). Wortley (2001) suggests that SCP only addresses a portion of the offender and situation interaction which becomes the criminal act. According to Wortley (2001) a more fitting approach occurs in two-stages. The first involves the introduction of circumstances that are conducive to offending and the second the weighing of the costs and benefits of committing the actual act by the offender (Wortley, 2001).

Lastly, while the criticism that situational crime prevention simply displaces crime from one area to another has been noted, it has also been shown to be invalid (Guerette & Bowers, 2009; Wortley, 2010). Displacement, which was discussed earlier in relation to hot spots policing, is the “relocation of a crime from one place, time, target, offense, tactic, or offender to another as a result of some crime-prevention initiative” (Guerette & Bowers, 2009, p. 1333). To more fully evaluate this concept of displacement Guerette and Bowers (2009) analyzed 102 assessments of situationally based crime prevention interventions and found that not only did the displacement of crime occur only 26 percent of the time, but that the crime reducing benefits of the initiatives were dispersed to surroundings areas in 27 percent of the evaluations.

Situational Crime Prevention and SkyWatch Towers

This focus on reducing crime through environmental alterations turns one’s attention to settings for crime rather than those who are offending (Clarke, 1997). Brantingham and colleagues (2017) note how the environment that surrounds us not only shapes our everyday lives, but also crime, as it either restricts our movements or presents us with opportunities. Law enforcement’s deployment of SkyWatch for use of its surveillance capabilities as a deterrent mechanism fit within this framework of situational crime prevention, specifically formal surveillance, and the principles of hot spots policing. The uniqueness of SkyWatch is that the surveillance becomes a hybrid of technological assistance coupled with individual officers’

ability to identify criminal activity. Future research evaluating the effectiveness of SkyWatch towers as a crime prevention strategy through the lens of both situational crime prevention and hot spots policing principles is recommended.

Appendix B

SkyWatch Recruitment Letter

Date (XXXX)

Dear (XXXX)

I hope this finds you well. I am reaching out to you as you are employed by XXX (Law Enforcement Agency).

My name is Penny Geyer, and I am a doctoral student majoring in criminal justice at the University of New Haven, CT. With Dr. Kevin Barnes-Ceeney we are attempting to learn about the use and deployment of SkyWatch as an aerial surveillance tower. Your insights, knowledge, and first-hand experience with the above technology are extremely valuable to us and we would greatly appreciate it if you can kindly participate in the study regarding SkyWatch.

Confidential interviews usually last between 30 and 45 minutes and will be scheduled with you on a day and time that fits with your schedule.

Please let us know if you would be willing to participate in this important research, or if you would like further information.

I look forward to hearing from you!

Sincerely,

Penny Geyer

Room 310 South Campus Hall
Henry C. Lee College of Criminal Justice & Forensic Sciences
University of New Haven
300 Boston Post Road
West Haven, CT 06516
T. 203.479.4894
E. pgeyer@newhaven.edu

Appendix C

Consent Form



University of New Haven

HENRY C. LEE COLLEGE OF

CRIMINAL JUSTICE AND FORENSIC SCIENCES

CONSENT TO PARTICIPATE IN A RESEARCH PROJECT

Project Title: Eye in the Sky: A Grounded Theory of SkyWatch Deployment

Co-Principal Investigators: Kevin Barnes-Ceeney Ph.D. and Penny Geyer MS
300 Boston Post Road, SCH 309
West Haven, CT 06515

Tel.: 203-479-4894

Site where study is to be conducted: XXXXXXXXXXXX

Introduction/Purpose: You are invited to participate in a research study. The study is conducted under the direction of Kevin Barnes-Ceeney, Assistant Professor in the Department of Criminal Justice at the University of New Haven. This study seeks to gather information to establish a grounded theory formed from law enforcement's utilization of FLIR SkyWatch, a mobile surveillance tower, that aims to deter crime using an aerial perspective.

I would like to record our conversation. This is so that we can more accurately understand what you are saying. You may ask for the recorder to be stopped at any time, and the contents erased. All recordings will be erased as soon as I have transcribed our conversation

Procedures: Ten to twenty individuals are expected to participate in this study. You will participate in one interview lasting approximately 30 to 45 minutes.

In the interview we will discuss your knowledge of SkyWatch, how it is utilized, how it is deployed, and any other information relevant to policing strategy that involves this aerial surveillance tower.

Possible Discomforts and Risks:

The risks to you concerning study participation are minimal. You may believe you have nothing important to say. However, you do have important things to say, and we are keen to listen to your views.

You can refuse to answer any question you are uncomfortable answering. You may also stop participating at any time. If you are bothered by anything discussed during the interview, please raise your concerns with the researcher.

Benefits: There are no direct benefits to you for participating in this study.

Alternatives: You are free to choose not to participate in the study.

Voluntary Participation: Your participation in this study is voluntary, and you may decide not to participate without prejudice, penalty, or loss of benefits to which you are otherwise entitled. If you decide to leave the study, please let the co-principal investigator, Penny Geyer, know.

Confidentiality: During the interview data obtained from you will be collected via a digital audio recorder. The collected data will be accessible to the co-principal investigators Kevin Barnes-Ceeney and Penny Geyer, only. All individual information obtained from consent forms will be held strictly confidential. We will keep your consent form separate from the information you provide during the interview in a locked filing cabinet in the Lee College, University of New Haven. You will not be identified in any reports, publications, or scientific presentations that result from this study. Any quotes, opinions, attitudes and ideas you give us will be de-identified. All raw data will be kept at the Lee College, University of New Haven in a password protected computer and/or a locked filing cabinet. When we transcribe interviews any names that are heard will be removed. The original recording will then be erased.

Although every reasonable effort will be made to protect the confidentiality of your records, such protection cannot be guaranteed. By law, the University of New Haven's Institutional Review Board (IRB), and other regulatory authorities may inspect our records. All personal information made available for inspection will be handled in strictest confidence and in accordance with data protection laws.

Contact Questions/Persons: If you have any questions about the research now or in the future, you should contact the co-principal investigator, Kevin Barnes-Ceeney (tel.: (203)479-4894; email: kbarnesceeney@newhaven.edu). If you have any questions concerning your rights as a participant in this study, you may contact the chair of the University of New Haven's Institutional Review Board, (email: irb@newhaven.edu).

Statement of Consent:

I have read the above description of this research and I understand it. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions that I may have will also be answered

by the co-principal investigators of the research study. I voluntarily agree to participate in this study.

By signing this form I have not waived any of my legal rights to which I would otherwise be entitled.

I will be given a copy of this statement.

Print your name

Signature

Date Signed

Co-principal investigator

Signature

Date Signed

Appendix D

Interview Protocol

Interview protocol: Eye in the sky: a grounded theory of SkyWatch deployment

Introduction

I really appreciate you agreeing to speak with me. I'm not sure how much you know about this study, so before we begin, let me tell you a little bit about it. This study is part of a group effort at the UNH to identify best practice technologies in crime prevention and how such technologies are helping law enforcement. I'm attempting to obtain information regarding the utilization and deployment procedures of SkyWatch aerial surveillance towers. I will be speaking with law enforcement personnel, such as yourself, from agencies that have utilized SkyWatch in their jurisdiction. I am looking to get a detailed understanding of the reasoning behind its deployment and the specific protocols that have been generated around its use. Additionally, any thoughts or insights you have regarding SkyWatch would be appreciated. I ultimately would like to use this information to generate an article for scholarly journals and at a professional conference, but at no time will I use any personal information or identifiers. Future research may develop, pertaining to the effectiveness of SkyWatch, from this initial informational gathering step, and if so, I'd hope to be able to speak with you again.

Do you have any questions?

Department Acquisition of SkyWatch

1. To begin, I'd like to learn about when and how your department acquired a SkyWatch tower?

PROMPTS

When and how acquired

Can you discuss when your department acquired the mobile surveillance tower? Could you walk me through the process your department went through to get it?

2. Additionally, can you tell me why your department acquired the tower?

PROMPTS

Why acquired

There are a number of reasons that law enforcement agencies chose SkyWatch? Can you tell me your department's reasons?

Procedure for SkyWatch Utilization and Deployment

3. How exactly is the surveillance tower used and how do you decide when to use it?

PROMPTS

Utilization of SkyWatch

How many officers are assigned to the tower? What is the required training for deployment and operation of it? Are staff always inside? Can you talk about the relationship between officers in SkyWatch and officers on the ground? Why is SkyWatch used? Can you tell me about some of the technical aspects of SkyWatch?

Deployment of SkyWatch

What determines its deployment? How is the location of its deployment determined? How long is it normally deployed for and what determines this? What is hoped to be accomplished/what is the aim of its use?

Personal Perspectives of SkyWatch

4. Tell me what you think about use of a mobile surveillance tower in law enforcement

PROMPTS

What do you think of the SkyWatch equipment itself? Do you feel it is utilized effectively, if not how do you think this could be accomplished? Do you think it could be used in a different manner to accomplish different goals than previously discussed, and if so, what would those ways be? How do you think it effects those individuals in the area it is deployed?

Anything else?

5. Is there anything else that we haven't mentioned that you feel is important I know?

Close

Well, that about finishes things up. I really appreciate the time you have given me today. Your knowledge and thoughts have really helped me to understand SkyWatch, not only from a technical side, but from a procedural perspective. Thank you!

Appendix F

Excerpt from Memoing (Qualitative)

21 May 2019

SUMMARY: FIRST SKYWATCH INTERVIEW WITH LAW ENFORCEMENT

I spoke to a male, Deputy Chief, of a large department. He was very friendly and informative. He had a very positive view of SkyWatch's deterrent capabilities. Our discussion went beyond SkyWatch towers to other CPTED, crime prevention through environmental design.

30 June 2019

SUMMARY: FIRST IN-PERSON SKYWATCH INTERVIEW

I took a train to a town where a law enforcement agent was dispatched to receive me and bring me to a community event where a tower was being deployed for what was called a "show and tell". I was allowed into the tower and the operator raised it to the full height. Once raised the operator, a civilian, let me conduct the interview. He was the main individual responsible for the agency's tower and its deployment. He was very knowledgeable about the tower itself and spoke of several trainings he had been to so he could be a proficient observer when the tower was deployed. While at this event I also spoke to several other officers that had previously been assigned to a tower deployment. One officer, a male, had an extremely negative view of the tower. Another officer, a female, had a more positive one. I was also able to speak to a community leader of the area to ascertain his thoughts on the tower. His words were of a positive and appreciative nature.

12 July 2019: INTERVIEW WITH FEMALE VOLUNTEER COORDINATOR

I conducted a phone interview with a volunteer coordinator in a police department. She was responsible for the deployment of the department's SkyWatch tower, as well as scheduling the manning of it with civilians. The civilians are responsible for deploying it, observing in it, and returning it. She felt the tower was an asset for the department to help deter crime. She discussed how the tower must look manned even if it is not.

18 July 2019: NOT PD'S OWN TOWER

I conducted a phone interview with a lieutenant, male, from a police department on the west coast. His department does not have their own tower yet but have one on order. He was very positive regarding the deployment of a tower as a deterrent of crime. He spoke of how his department mainly borrowed the tower they had been using for special events that drew large crowds. He noted how important it is for the police to help community members feel safe in their life pursuits and that a tower assisted with that. He also noted how a tower is a force multiplier in that a tower can assist in observing areas that would take numerous officers on foot to do the same thing.

22 July 2019: NEGATIVE INTERVIEW

I conducted a phone interview with male sergeant. His agency had acquired the tower through a grant to address violent offenders. He was rather short and abrupt during the interview. Said the grant was over and now tower more used as a "dog and pony show" type of thing. He did note a Big Brother effect, was overall felt there was not a significant reduction in crime.

23 July 2019

SUMMARY: SECOND IN-PERSON SKYWATCH INTERVIEW

I arrived via train where the interviewee met me and walked me to his office. He was a white male. He was friendly and informative. He spoke of having more use for cameras on trailers than the SkyWatch tower as the tower has such a large footprint. His overall opinion of the SkyWatch towers was positive.