

Cash-in-Transit
An analysis of the victimization of armoured guards

by

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ABSTRACT

CASH-IN-TRANSIT AN ANALYSIS OF THE VICTIMIZATION OF ARMoured GUARDS

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Although armoured truck guards perform a valuable service in transporting cash and other valuables to financial institutions, businesses, and private individuals, there has been very little research into the ways in which they are victimized while on-duty. Routine Activities Theory was used as a theoretical basis to analyze data collected from respondents currently employed as armoured guards regarding their victimization experiences, and to provide policy suggestions to reduce the likelihood of further incidents. Respondents were asked to answer questions regarding their target suitability and level of guardianship, as well as the geographic and environmental characteristics of the location in which the event took place. Results suggest mixed support for the use of Routine Activities Theory as a suitable explanation for the victimization of armoured guards.

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TABLE OF CONTENTS

Chapter One: Introduction	1
Chapter Two: Literature Review	
Introduction	7
Overview of Routine Activities Theory	7
Victimization of Armoured Guards	17
Insights on the Victimization of Armoured Guards from the Experiences of Police Officers	20
The Current Study	27
Conclusion	28
Chapter Three: Data and Methodology	
Introduction	29
Making Contact	29
Ethical Concerns	31
The Survey	32
Sample	37
Data Analysis	39
Key Measures	41
Conclusion	48
Chapter Four: Analytic Results	
Introduction	49
Summary Data	49
Bi-variate Analyses: Individual-level Characteristics	54

Bi-variate Analyses: Geographic and Environmental Variables	60
Bi-Variate Analysis: Target Suitability	64
Bi-Variate Analyses: Level of Guardianship	65
Conclusion	66
Chapter Five: Discussion	
Introduction	68
How often, and to what extent, are armoured truck guards subject to violent victimization?	68
What factors increase the likelihood of violent victimization for armoured truck guards?	73
What steps can be taken to reduce the likelihood of victimization for armoured truck guards?	85
Limitations in Methodology and Data Collection	95
Conclusion	99
Chapter Six: Conclusion	101
References	105
Appendix A: Letter of Information	114
Appendix B: Consent Document	115
Appendix C: Questionnaire	117
Appendix D: Sample Report Form	125
Appendix E: Variable Coding	126

List of Tables and Figures

Table 4.1	Number and Type of Reported Incidents	51
Table 4.2	Bi-Variate Relationships: Demographic, Occupational, Geographic, Environmental, Target Suitability, and Guardianship Characteristics by Incident/Non-Incident	54
Table 4.3	Total Number of Incidents by City	57
Figure 5.1	Likelihood of Victimization and Predictability of Movement	79

Chapter 1: Introduction

“Every piece of currency in your billfold, every coin in your pocket, spent at least part of its life in an armoured car before it got to you. And that’s not the half of it. The ATM and credit cards you carry, gemstones and precious metals in your jewelry, bonds and stock certificates underlying your investments, disputed election ballots, famous works of art, rare manuscripts, collectibles of any sort, all, at one time or another, have found their way onto armoured car manifests.” (Dunbar and Kingwell, 2003)

In 1990, 46,651 Canadians were employed in the private security and investigation industry. By 2001, this number had grown to 78,919, representing a 69% growth - nearly five times the growth of all Canadian industries during this same period (Sanders, 2005). Statistics for the number of Canadians employed by armoured truck companies, specifically, are not available. However, several companies have reported expanding their cash-handling services throughout Canada in recent years -including Garda (2006), Churchill Armoured Car Service (2008a, 2008b), INKAS Armoured (2011), G4S (2011), and Brink’s Inc. (2009) - suggesting that the armoured cash-in-transit industry is no exception.

Although the exact number of armoured guards employed in Canada was unavailable, information gathered from the websites of four companies operating in Canada provides some insight as to the extent of their operational footprint: G4S Canada

(2013) states that it employs “over 2500 employees in 55+ branches” in their “cash solutions” division, Brink’s Canada Ltd. (2013) lists 46 branches on its “locations” page, Garda (2011) lists nine Canadian branches (all located in Ontario and Quebec), and Churchill Armoured Car Services (2009) states that it employs more than 90 full-time employees throughout British Columbia, and in Calgary.

In the simplest terms, an armoured guard’s primary duty is to transport valuables (or “liability”) from one location to another. This may include transporting liability from the branch at which the guard is employed to a client (such as a store, bank, or individual), from a client to the branch, from one branch to another, or from one client to another. In general, guards who transport liability (which may include cash, precious metals, jewellery, or valuable documents) to and from businesses during daytime hours are referred to as “messengers”, while guards transporting liability to and from banks outside of regular business hours are called “technicians”. Technicians are also responsible for replenishing cash supplies in ATMs, and collecting any deposits made by customers, and may work during the day depending on the location of the ATM and the client’s requirements (for example, an ATM located in a store that only has staff on-site during regular business hours may not be accessible to the guards outside of these hours).

Armoured truck crews play a critical role in the protection and safe transportation of valuable commodities. The nature of the job, however, can place them in direct confrontation with violent offenders. For example, on October 28th, 2011, an armoured truck guard was shot in the leg during a robbery in Point-Aux-Trembles, Quebec (CTV News, 2011). On June 15th, 2012, three armoured truck guards were shot and killed at the University of Alberta, while a fourth was left with serious injuries (CBC News, 2011).

On April 26th, 2013, CBC News reported that two men had been arrested and charged while preparing to attack an armoured truck in Toronto (CBC News, 2013), followed shortly after by a report that police in Montreal had arrested three men planning a similar offence (National Post, 2013). These highly-publicized events are just a few examples of the ways in which Canadian armoured guards have been victimized in recent years - the actual number of incidents that have not been reported, or publicized, cannot be known. Various researchers have acknowledged that the harm caused to those who choose to work for the protection of individuals and their property can have significant consequences not only for themselves, but their friends and family as well (Fridell et al., 2009; Ryan, 1997).

Armoured truck guards, as private citizens, have duties and privileges that are significantly different from those of the police and other peace officers. Whereas the responsibilities of police officers include apprehending criminals, executing warrants, assisting the victims of crime, and preserving the peace, the role of armoured guards is more closely identified with that of “traditional” security guards - protecting the property and interests of their clients (Swol, 1999). Despite the similarity between armoured guards and security guards, however, the day-to-day challenges and tasks faced by armoured guards are substantially different from those of security personnel engaged in static operations. More specifically, interacting with police officers or security personnel engaged in their lawful duty offers little benefit to criminals, while placing them at significant risk. However, the liability (cash or other valuables) transported by armoured truck companies provides an incentive for offenders to seek out and victimize their employees. Security officers tasked with monitoring a specific location have the added

benefit of knowing that the site they are patrolling has remained secure, and that intruders are likely to be detected. This is not a luxury shared by armoured truck crews, who must frequently enter unmonitored sites without the benefit of knowing that site security has been maintained.

Despite the risks faced by armoured guards, the academic community has shown little interest in understanding what factors contribute to their violent victimization or improving their on-the-job safety. This study seeks to explore how often, and to what extent, armoured truck guards in Southern Ontario are subject to violent victimization, identify which factors increase the likelihood of violent victimization of armoured truck crews, and identify steps that can be taken to reduce the likelihood of victimization. This study will also make recommendations to prevent future on-the-job incidents, in order to bolster the scant academic literature on the subject and to improve the working environment of armoured guards.

Chapter Two provides an overview of Routine Activities Theory, the main theoretical perspective guiding this study. This approach to understanding crime is based on discovering which environmental, social, and behavioural factors facilitate the convergence of motivated offenders and suitable targets in an absence of capable guardians (Cohen and Felson, 1979). As such, this theory is appropriate when exploring the victimization of armoured guards, who are highly mobile and work in variety of settings. Chapter Two also describes the way in which the CRAVED model (Clarke, 1999) may be applied to understanding and evaluating the likelihood of victimization for armoured guards, and draws upon studies conducted with the police to explore the way in which job-related stress can impact their on-the-job performance.

Chapter Three discusses the methodology of this study. This includes a description of the data-collection survey, which draws information from respondents currently employed as armoured guards, the way in which it was distributed, and the way in which the data was examined through the use of statistical analysis software. This chapter also describes the process by which the armoured truck company that collaborated in this study came to be involved, and my personal connection to the armoured truck industry.

Chapter Four presents the summary data relating to the on-the-job incidents reported by the sample population of armoured guards. This chapter also provides the results of the bi-variate analyses attempting to identify which demographic, occupational, environmental, and geographic factors are associated with the likelihood of victimization, as well as variables relating to target suitability and guardianship.

Chapter Five presents a discussion of the results described in Chapter Four. In particular, this chapter examines the frequency and type of offences that were reported by the respondents, as well the impact that these incidents had on their physical and psychological wellbeing. This is followed by an in-depth analysis of the role of the variables to be significantly correlated with an increased likelihood of victimization, as well as their theoretical implications. The chapter concludes by outlining the policy implications of these findings, and a discussion of the limitations of this study.

The final chapter provides a conclusion to this study and provides suggestions for future research into this relatively-unexplored subject. It is my hope that this study will help to fill gaps in the Routine Activities literature, and encourage other researchers to work towards developing effective crime-prevention strategies that can be utilized by

armoured guards, and the companies that employ them.

Chapter 2: Literature Review

2.1 Introduction

Despite the potentially high-risk jobs that armoured guards perform when transporting valuables such as cash or precious metals, little is known about their victimization experiences. This chapter describes the theoretical concepts, academic literature, and research objectives relevant to my examination of the victimization experiences of armoured guards. I begin by outlining Routine Activities Theory, which focuses attention on victimization risks and the daily routine activities that make crime more or less likely (Cohen and Felson, 1979). By focusing on the situation or immediate setting in which a crime occurs, this theoretical framework is particularly well-suited to explaining how the daily employment activities of armoured guards potentially influence their victimization risk. I then review the scant research on active and incarcerated offenders who have engaged in cash-in-transit robberies (Gill, 2001; Smith and Louis, 2010). In the absence of a large body of literature focused specifically on armoured guards, I also review evidence about the occupational safety of police officers, whose job roles share some similarities with guards in terms of stress development and risk of victimization. The chapter concludes with a discussion of the research questions that I address in the remainder of the study.

2.2 Overview of Routine Activities Theory

To better understand the nature of the predatory victimization experienced by armoured guards, this study will make use of the Routine Activities perspective as a

theoretical framework. This theoretical perspective is particularly well-suited to understanding the victimization of armoured guards because of its assertion that crime is the result of the convergence in time and space of motivated offenders, suitable targets, and an absence of capable guardians (Cohen and Felson, 1979; Felson, 2002) and is facilitated by the everyday actions (or routine activities) of these parties. As a result, the crime-prevention initiatives stemming from Routine Activities principles are often implemented at the situational level (Cohen and Felson, 1979; Cozens et al., 2001; Cozens et al., 2005; Felson, 2002; Grof and McCord, 2012; Kajalo and Lindblom, 2010) allowing potential victims to exert some control over their likelihood of victimization. For armoured truck companies, Routine Activities Theory provides a theoretical and practical foundation for understanding and reducing the likelihood of victimization of their employees that is compatible with their existence as privately-owned, for-profit commercial entities.

Spatio-Temporal Convergence of Criminogenic Factors

First introduced by Cohen and Felson in 1979, Routine Activities Theory (RAT) is an opportunity theory - a theory focusing on the connection between the opportunity to commit crime and actually engaging in the offence (Lilly et al., 2010, pg. 330) - which posits that predatory criminal acts are the outcome of three factors converging in time and space (motivated offenders, suitable targets, and a lack of capable guardians). As a result, changing crime rates can often be attributed to changes in social organization that result in citizens modifying their day-to-day behaviour (for example, the movement of women into the workplace after WWII), rather than the rise of pathological conditions within

society (Lilly et al., 2010). Based on this assumption, RAT seeks to explore the way in which the spatio-temporal organization of daily activities facilitates the transformation of the desire to engage in crime into actual criminal activity through the convergence of these three factors.

According to RAT, the convergence of motivated offenders and suitable targets in the absence of capable guardians is often facilitated by the routine activities, including those intended to satisfy needs or desires for sustenance, territorial hegemony, sexual outlet, safety, property, or (in some cases) simple survival, of ordinary individuals (Cohen and Felson, 1979, pg. 590). Since attempting to fulfill one's needs or desires through criminal activity does not generate the resources or services that would allow other members of society (including the offender) to fulfill their own needs or desires (theft, for example, bypasses the exchange of cash for goods that stimulates the production of further goods), crime can be considered a parasitic activity that can only exist to the extent that it can feed upon other activities (criminal or otherwise). Thus, it may be prevented (or at least redirected) by modifying "feeder" activities so as to not facilitate the convergence of motivated offenders, suitable targets, and a lack of capable guardians (pg. 590).

Motivated Offenders, Suitable Targets, and Capable Guardians

Given RAT's emphasis on a "pragmatic", "depoliticized" approach to crime prevention (Lilly et al., 2011, pg.331), this theory is generally not concerned with the motivations of individual offenders. Instead, Routine Activity Theory simply acknowledges that such individuals exist and offers suggestions to curtail crime by

limiting their access to suitable targets and improving guardianship (Cullen and Agnew, 2011). While it has been criticized by some theorists for not examining the motivations of offenders in greater detail (Cullen and Agnew, 2011; Tibbets and Hemmens, 2010), it can be perceived as a complimentary approach that simply seeks to address crime at the situational level, while allowing other theories to identify the factors that give rise to motivated offenders

RAT's explanation for offender motivations is most closely aligned with the rational choice perspective (Cullen and Agnew, 2011; Lilly et al., 2011; Tibbets and Hemmens, 2010), and may best be interpreted as a set of generalizations about what will make an offender more likely to engage in a criminal act, rather than an examination of the personal characteristics and motivations of individual criminals. The rational choice perspective states that individuals are motivated to act in a way that maximizes pleasure and minimizes pain or displeasure, and that they conduct a cost-benefit analysis when deciding to engage in an activity (legal or otherwise) (Appelrouth and Edles, 2008). Individuals, therefore, may be dissuaded from engaging in criminal behaviour by limiting their access to suitable targets and improving guardianship, as their likelihood of benefiting from the criminal act (be it financially, emotionally, or otherwise) will be reduced, and the likelihood of being apprehended and/or sanctioned will increase.

The term "suitable targets" encompasses a wide array of locations, items, and people, and will vary depending on the environmental and social context. For example, unprotected homes may become suitable targets for burglary, while an intoxicated individual may be a suitable target for robbery (Cullen and Agnew, 2011, pg. 407). The

CRAVED model¹ provides a useful framework for identifying items or people that would be considered suitable targets from the perspective of a rational offender (Clarke, 1999).

Targets that are *Concealable*, *Removable*, *Available*, *Valuable*, *Enjoyable*, and *Disposable* are more likely to tempt offenders into engaging in criminal behaviour because they present a high-benefit, low-cost opportunity for material, financial, or emotional pleasure (Felson, 2002). Given that cash - the “liability” most commonly transported by guards - is a highly valued item fitting the CRAVED paradigm (Felson, 2002, pg. 30), thereby increasing their risk of victimization. The CRAVED model is also applicable when evaluating the suitability of the armoured guards themselves as targets of an assault, robbery, or homicide: the offender must “*conceal* the violent act... *remove* himself safely from the scene; *avail* himself of a convenient human target... find a target of *value* in his own mind; *enjoy* the criminal act, or at least avoid pain to himself, and *dispose* of incriminating evidence, even the victim.” (Felson, 2002, pg. 32). Whether an offender is evaluating the suitability of the valuables carried by the guards, or the guards themselves as targets, any or all of the elements of CRAVED may be influenced by the guard’s personal habits, working environment, or company policy, therefore increasing or decreasing the likelihood that a criminal act will occur. For example, a guard working late at night may be at an increased risk due to the fact that fewer witnesses may make it easier for an offender to *conceal* an assault. On the other hand, a guard working with a

¹ VIVA (Value, Inertia, Visibility, Access) is an alternative acronym to CRAVED which has been used as a model for identifying the suitability of a target. The CRAVED model is preferred for the current study because it has been used extensively by the original creators of Routine Activities Theory.

partner may be seen as less *available* for victimization, and, therefore, will be less likely to be victimized. Due to the inherent value of the liability that the guards are responsible for transporting, armoured trucks may be perceived as tempting targets for robbery. As a result, guards who are inadequately trained and equipped to protect themselves are likely to be at an increased risk of suffering grievous bodily injury or death during such an event. For this reason, armoured truck guards employed in Canada are granted an “authorization to carry” (ATC) - a permit issued by the RCMP that allows them to carry firearms while on-duty - and are subjected to regular exams requiring them to demonstrate an acceptable level of knowledge regarding the legal use of deadly force, as well as basic firearms handling skills. Aside from being necessary to ensure public safety, this also serves to decrease their target suitability.

The concept of guardianship is a critical component of crime causation within Routine Activities framework, as the presence of capable guardians can increase the costs of offending, thereby dissuading rational offenders from engaging in a criminal act (Cohen and Felson, 1979). Despite the obvious role of police officers and security personnel as guardians, informal guardians can include store owners (Cohen and Felson, 1979), neighbours (Lilly et al., 2010, pg. 332), or even home security systems (Tibbets and Hemmens, 2011, pg. 104) and dogs (Lilly et al., 2010, pg. 332). For armoured guards, guardians could include members of the public (which may vary depending on the time of day), their partner (if they are working in pairs), or alarm systems in their client’s places of business (if they are activated).

Preventing Crime

As has already been noted, RAT explains that criminal behaviour is the result of the convergence of a motivated offender, suitable target, and a lack of capable guardians in time and space. As a result, RAT posits that changes in the setting - such as the arrival of a guardian, or the removal of a tempting target - may be effective in deterring offenders from engaging in criminal behaviour. Likewise, changes that increase temptation - such as the loss of a guardian - will increase the likelihood that an offender will commit a crime. This allows potential victims to exercise some control over their likelihood of victimization, by altering their own behaviours or environment in such a way that offenders will be less willing to commit a crime or, at least, be redirected to a more suitable target (Cohen and Felson, 1979).

Situational deterrents that decrease the temptation to engage in crime by controlling access, providing natural surveillance, and fostering territorial behaviour can be incorporated into the physical environment through the use of *natural*, *organized*, and/or *mechanical* strategies (Felson, 2002, pg. 126). Organized strategies make use of police officers and security personnel to act as agents of control, making them labour-intensive and expensive in terms of monetary and human capital, while mechanical strategies rely on “alarms, cameras, other hardware... to control access and provide surveillance” (pg. 126). While less labour-intensive than organized strategies, the cost of buying, installing, and maintaining the equipment, makes mechanical strategies more expensive than natural strategies. Natural strategies focus on controlling access to an area, so that it becomes impossible for offenders to “enter anywhere, attack anything or anyone, and exit anywhere afterward” (pg. 128). Natural strategies also promote shaping

the environment in such a way that potential offenders are faced with an unverifiable possibility of conspicuousness. Maximizing the surveillance of an area by increasing lines of sight can create an effect similar to an inverse-Panopticon² - since the offender cannot possibly hope to monitor all of the guardians at once, they cannot ensure that they will be able to commit a criminal act without being caught. By employing these techniques (commonly known as “crime prevention through environmental design”, or CPTED) offenders not only lose potential escape routes, but are also more likely to be seen before, during, and after committing a crime. Armoured truck guards simultaneously make use of, and are subjected to environments designed in accordance with, CPTED principles. While their employers make use of various mechanical strategies (such as alarms, electronic locking systems, and purpose-built trucks that are resistant to assault) and organized strategies (most commonly by hiring and training armed guards), guards themselves have little or no control over the mechanical, organizational, or natural strategies being used by their clients. As such, while armoured truck companies and the guards they employ have the ability to influence their working environment in a way that would prevent the convergence of motivated offenders, suitable targets, and a lack of capable guardians, their influence is, ultimately, limited. Said differently, while the armoured truck companies adhere to a minimum standard for on-the-job safety, the safety

² Originally designed by Bentham, the Panopticon is an architectural prison design that allows a single guard in a central tower to observe any and all of the prisoners housed in a circular gallery. The prisoners, in turn, could not verify if or when they were being observed. It was believed that the threat of surveillance would lead the prisoners to develop self-discipline (Applerouth and Edles, 2008, pg. 644).

of their employees are ultimately circumscribed by the decisions of their clients, including but not limited to their business hours, location, security procedures, and preferred time of service.

There is strong evidence to support Routine Activity Theory's claim that modifying the place, time, or environment in which routine activities are carried out can reduce the likelihood that criminal activity will take place. The implementation of organized, mechanical, and natural surveillance techniques in residential zones (Cozens et al., 2001) and parks (Grof and McCord, 2012), in the form of improved lighting and attractions that encourage legitimate users to occupy otherwise unused space has been linked to a reduction in criminal activity in these areas. The implementation of CCTV cameras and security personnel has been linked to a decrease in property crime and theft in shopping centers (Kajalo and Lindblom, 2010) - although there is conflicting evidence as to their efficacy in reducing the likelihood of commercial robbery (Wright and Decker, 1997). Removing posters or advertisements from windows facing the street, restricting access to the premises, and ensuring that multiple staff members are working, have all been shown to be effective at deterring robbery in commercial establishments (Felson, 2002; Wright and Decker, 1997). Conversely, spectator events have been shown to lead to an increase in reported crime, as they facilitate the convergence of offenders and targets in time and space (Kirk, 2006). Given that all of these areas are potential locations for businesses or individuals seeking the services of armoured truck companies, the crime-control initiatives (or lack thereof) have a direct impact of the safety of the guards servicing the area.

Limitations of Routine Activities Theory for explaining the victimization of armoured guards

While the reasons for examining the victimization of armoured guards using the Routine Activities perspective have been detailed earlier in this section, there are some limitations to consider. Perhaps the most obvious complicating factor will be the task of differentiating how each of the three key factors described by Cohen and Felson (1979) influence the victimization of armoured guards when the guards, themselves may be the *suitable targets* for harassment, robbery, or assault, but are also the *guardians* of another *target* (the liability).

Furthermore, Cullen and Agnew (2011) state that operationalizing the key concepts of the theory can be “problematic” (pg. 407). This limitation certainly applies when attempting to determine whether or not a guard represents a “suitable target” - a guard who indicates that they were distracted, tired, or ill at the time of a robbery could be said to possess the qualities of a suitable target. However, it will be impossible to determine whether or not any of these traits were obvious to the offender (thus making it impossible to know if they influenced the offender’s cost-benefit analysis when deciding whether or not to victimize the guard).

Finally, because RAT takes the supply of *motivated offenders* as a given (Cullen and Agnew, 2011; Tibbets and Hemmens, 2010), rather than seeking to explain why or how such individuals become motivated, it is not possible to determine whether or not the experiences reported by the guards in subsequent chapters were influenced by related criminal activity that itself was caused by wider social trends, such as an increase in drug

use or economic depression (Lilly et al., 2011, pg. 331). Despite these limitations, RAT is still the most appropriate framework for understanding the empirical findings related to the victimization experiences of armoured guards.

2.3 Victimization of Armoured Guards

Despite the growth of the private security industry (Sanders, 2005), a thorough review of the literature demonstrates that there are few studies investigating the occupational safety of armoured truck guards, or security personnel in general (Gilbert, 2012; Gill, 2001; Smith and Louis, 2010; Wiatrowski, 2012). This stands in sharp contrast to policing, where there is a large and growing body of research into the occupational safety of on-duty officers (Brown and Trottier, 1995; Brandl and Stroshine, 2003; Brandl and Stroshine, 2012; Church and Robertson, 1999; Dorn and Brown, 2003; Edwards, 1995; Finklestein, 1998; Hawkins, 2001; Lichtenberg and Smith, 2001; Morrison and Kenney, 2002; Oron-Gilad et al., 2005; Vila, 1996; Vila, Zhao, He, & Loverich, 2003; Wilson and Zhao, 2008)³. The notable exception to this, however, is some limited research into one of the most dramatic and highly-publicized ways in which armoured guards can be victimized - cash-in-transit robberies. Indeed, recent studies by

³ The emphasis on studying the occupational safety of police officers over that of security personnel is likely the result of two factors: first, researchers may have better access to the police, given that they are a public institution; second, police officers are generally considered to be of higher status than security guards, due to the fact that they are peace officers, rather than private citizens, and are more likely to draw the interest of researchers.

Gill (2001), who interviewed 341 incarcerated offenders who had engaged in 47 cash-in-transit robberies, and Smith and Louis (2010), who examined the techniques used by offenders engaged in cash-in-transit robberies from around the world, provide insight into the dangers faced by armoured guards.

Cash-in-transit robberies usually take one of two forms (Gill, 2001; Smith and Louis, 2010). The first involves an attack on the courier during the movement of liability from the truck to the client, while the second involves stopping and assaulting the armoured truck while en-route to a destination. Both of these strategies offered unique advantages to the offender (pg. 281): engaging the guards in open areas (for example, while they were carrying valuables from the truck to a customer's premises) decreased the likelihood that the offenders would be trapped (and subsequently apprehended) if they were forced to abandon the robbery. Offenders who chose to commit a robbery by launching an assault against the truck, rather than the courier, also had the advantage of pre-selecting the site of the robbery if they knew the route the truck would take. This strategy is a prime example of the way in which a victim's routine activities - in this case, using the same route for an extended period of time - may facilitate the convergence of criminogenic factors that ultimately result in the commission of a crime. Gill's (2001) subjects reported engaging in the former technique - engaging the courier - twice as often as assaulting the truck.

While armoured guards may not be *ideal* targets for would-be victimizers, as they are armed and cognizant of the potential for victimization, the CRAVED valuables they carry certainly made them *suitable* targets for Gill's "professional" offenders. The speed with which the cash-in-transit robberies occurred - "often seconds and minutes" (Gill,

2001, pg. 285) also reduced the ability of formal *guardians* (ie - the police) to prevent, or respond to, the victimization of armoured truck crews. Even when police officers are on-site, there is evidence to suggest that an adequate level of *guardianship* cannot be guaranteed, as some offenders have reported using them as hostages during attacks (Gill, 2001, pg. 287). Smith and Louis (2010) also identified guards engaged in servicing ATMs - a major component of the armoured car industry - as popular targets (pg. 2), likely because they were focused on loading or unloading cash or deposits from the machine, and are thus unable to watch for would-be attackers (increasing their *suitability* by decreasing their *guardianship*) and had direct access to the cash the offenders sought.

These two studies lend significant support to the application of the CRAVED model to the victimization of armoured guards. The authors discovered that when committing a cash-in-transit robbery against armoured guards, offenders seek to *conceal* the act by committing the offence in secluded areas, and to *remove* themselves from the scene using stolen “getaway” vehicles located close to the armoured truck, and by operating in areas with multiple avenues of escape (Gill, 2001; Smith and Louis, 2010). They *avail* themselves of a suitable target by following armoured trucks in order to learn their routes or receiving “tips” from accomplices employed by the company (Gill, 2001). The targets are undoubtedly selected because of the potential for substantial monetary gain (Gill, 2001, pg. 280; Smith and Louis, 2010, pg. 5), making them highly *valuable*. While Gill (2001) noted that his subjects made no mention of *enjoying* the act, itself, they “considered the possibility of being caught and ... considered ways in which this risk needed to be managed” (pg. 280), and typically had a high level of confidence when planning the robbery. This was found to be true regardless of the number of guards they

would face (Smith and Louis, 2010). Finally, they *dispose* of the evidence by filtering their gains through intermediaries, threatening informants, and presumably abandoning or destroying stolen vehicles used during the robbery (Gill, 2001).

2.4 Insights on the Victimization of Armoured Guards from the Experiences of Police Officers

Police officers have responsibilities and powers that are distinct from those of armoured guards. Police officers, who are considered peace officers under Canadian law, are charged with enforcing the law and apprehending criminals. This is distinct from armoured guards, who are regular citizens employed by private companies to transport goods. Despite these differences, the occupational characteristics shared by these groups suggests there is also important overlap in the employment experiences of these two groups. For example, Ryan (1997) identified ten occupational traits that characterize a career in law-enforcement: being seen as an authority figure; the symbolic separation of the police officer from the rest of society caused by the use of a gun, badge, and uniform; working in a highly-structured, quasi-military organization; irregular schedules caused by shiftwork; the “double-edged sword” of camaraderie within the organization; having to tolerate unpredictable and intense “burst-stress”, rather than the constant, mundane stress found in other professions; the necessity of restraining oneself under extremely emotional circumstances; the need to work in a “fact-based” world where everything is judged according to written law; a “generally negative” working environment; and the subsequent difficulties associated with raising children caused by these traits. Although Ryan (1997) states that these occupational characteristics “makes

law enforcement officers different from other professionals” (pg. 63), many of them are shared by armoured guards. These shared characteristics include carrying symbols of authority, including a gun, uniform, and, depending on the company, a badge, which may result in guards being perceived as authority figures; being subjected to shift work; working with a partner; being subjected to “burst stress”; experiencing a “generally negative” working environment (depending on how they are treated by their clients and the public in general); and having to engage in emotional restraint during stressful incidents (such as a confrontation with a hostile or rude individual). These shared occupational characteristics of police officers and armoured guards suggest that research relating to the victimization of police officers may offer important insights to understanding the victimization of armoured guards, given the paucity of empirical research on armoured guards.

Although the majority of injuries sustained by police officers are the result of accidents, rather than violence (Brandl, 2003; Brandl and Stroshine, 2012), an analysis by Beattie and Cotter (2010) noted that police officers (along with taxi drivers) have the highest occupational risk of homicide in Canada. Police officers are also at significant risk of experiencing non-fatal forms of violent victimization: one Statistics Canada report (2009, pg. 5) notes, “police reported almost 10,000 assaults against peace officers in 2008. Almost 70 percent of these occurred in conjunction with at least one other offence, most commonly obstruction of a peace officer, level 1 assault and uttering threats.” In addition, there were 11,943 reported assaults against police officers in Canada (Statistics Canada, 2012B), suggesting that there has been an increase in this type of crime in recent years. The studies discussed below explore the causes of victimization for police officers,

as well as the effect that these incidents have on their personal and professional lives - and, by extension, the causes and effects victimization may have on the lives of armoured guards.

Causes of Victimization

The causes of police homicide have not been treated as distinct from the causes of homicide in general (Kaminski, 2008). Indeed, previous explanations of homicide, including police homicide, have suggested the following:

1. Police homicide is simply the by-product of the offender's desire to avoid arrest.
2. The mutual interaction of police officers and offenders in criminogenic socio-structural conditions increases the likelihood of victimization.
3. The political marginalization of the black population in major American cities has lead to the adoption of an aggressive mentality towards agents of state control.

However, the empirical support for each of these explanations was found to be mixed or nonexistent (Kaminski, 2008, pg. 368). Instead, regional economic disadvantage was found to be strongly associated with an increase in police homicide (Kaminski, 2008, pg. 367), owing to the fact that "economic strains... increase police officer proximity and exposure to motivated offenders" (pg. 369). It is also interesting to note that while Kaminski was unable to explain why areas with large black populations had an increased likelihood of police homicide (pg. 370), Fridell et al. (2009) and Kent (2010) assert that it is economic disadvantage between whites and blacks, rather than a large black population in and of itself, that contributes to increases in police homicide. High regional violent crime rates have also been correlated with increased rates of police homicide and assault

(Fridell et al., 2009), and research (Mayhew, 2001) has shown that the majority of offenders who engage in violent assaults against police officers are “disproportionately Indigenous”, unmarried, unemployed (or marginally employed) men under the age of 30 who are under the influence of alcohol or drugs (pg. 2). This would appear to suggest that violent crime directed towards police officers may be the result of wider social problems (such as unemployment or high rates of drug abuse).

There is mixed evidence regarding the impact of policies encouraging aggressive behaviour by police officers on their likelihood of violent victimization (Fridell et al., 2009; Wilson and Zhao, 2008). Although urban areas are inversely related to the risk of police homicide, likely due to the availability of emergency trauma services (Kaminski, 2008, pg. 369), high levels of racial segregation and diminishing citizen-police relations resulting from “the war on drugs” - in particular, the killing of citizens by police officers - have been correlated with increases in police homicide in the United States (Kent 2010).

Perhaps surprisingly, there is evidence to suggest that departmental policies promoting the use of body armour leads to a significant increase in the number of assaults and homicides perpetrated against police officers (Fridell et al., 2009). However, the authors caution that this pattern may be misleading, as policies promoting the use of body armour may have been adopted to account for already-high levels of assault and homicide (pg. 544)⁴.

Finally, a study conducted at the behest of the FBI suggests that psychological

⁴ The impact of body armour on the likelihood of victimization for armoured guards will be of special significance to the armoured truck company involved in this study, as it allows employees to decide whether or not they will wear body armour while on-duty.

factors commonly found amongst police officers may lead to an increased likelihood of being assaulted or killed while on-duty (Sztajnkrycer et al., 2010). Sztajnkrycer and his colleagues (2010) show that, rather than engaging in a traditional cost-benefit analysis when deciding to provide assistance to a downed colleague, most police officers adopt an aggressive “all or nothing” mindset, choosing to engage in risk-taking behaviour with little chance of success over a more cautious approach with a less-substantial reward. The authors state that “by choosing the law enforcement profession, they (the respondents) already had committed themselves to operating under a baseline level of significantly elevated perceived peril” (pg. 2) - a perception that may also apply to armoured guards, who have chosen to enter a profession with similar occupational characteristics (Ryan, 1997).

Without a doubt, the duties of armoured truck crews differ from those of police in important ways. Nevertheless, it is possible that similar psychological traits, such as a propensity towards risk-taking behaviour caused by a higher level of perceived stress (Sztajnkrycer et al.; 2010), or shared occupational characteristics (Ryan, 1997), will result in similar victimization experiences, or reported injuries, among police officers and armoured guards.

Impact of Stress

Given the working environment of police officers, it is perhaps not surprising that a significant body of research has focused on stress and its effects among law enforcement officers (Brandl and Strohshine, 2003; Brandl and Strohshine, 2012; Dunn and Cahill-Canning, 2005; Mayhew, 2001; Richter et al., 2013; Roberts and Levenson, 2001;

Ryan, 1997; Sarason et al., 1979; Sundaram et al., 2012). Much of this literature is concerned with the development of symptoms associated with Generalized Adaptation Syndrome - a mammalian physiological and psychological response to external sources of stress (Filaretova, 2012; Selye, 1936; Vijayashree, 2011) that, when maintained for long periods of time, can lead to a severe degradation of an individual's emotional and physical resources. This process occurs over three stages: an initial "alarm state", wherein the organism responds to the stressor; a second "resistance state", in which the organism actively maintains a heightened physiological and psychological response; and an "exhaustion state", which results in physical and emotional exhaustion following the depletion of biological and psychological resources.

It should come as no surprise that, due to their stressful working environment and on-the-job experiences, many police officers are likely to succumb to the "exhaustion state" at some point in their careers. Indeed, research has shown that long-term exposure to the stressors involved in police work can lead to psychological disorders that resemble the "exhaustion state", including depression and post-traumatic stress disorder (Brandl and Strohline, 2003; Brandl and Strohline, 2012). There is also evidence to suggest that long-term exposure to this working environment can have detrimental effects on an officer's intimate relationships (Roberts and Levenson, 2001; Ryan, 1997, Zhao, He, and Loverich, 2003) and job performance (Vila, 1996), as well as their psychological and physical wellbeing (Brandl and Strohline, 2003; Brandl and Strohline, 2012).

Occupational stress has also been linked with a decrease in job performance in a variety of fields (Jehangir et al., 2011; Vijayashree and Mund, 2011; Vila, 1996). Taken together, these adverse effects of stress stemming from on-the-job victimization experiences could

increase the risk of victimization by reducing alertness, degrading the officer's level of physical fitness, and fostering behavioural changes that reduce overall job performance. However, the introduction of stress-management techniques into police officer training programs has been shown to increase the ability of the officer to follow proper procedures during periods of intense stress (Dunn and Cahill-Canning, 2005; Sarason et al., 1979), suggesting that similar programs may be beneficial for armoured guards.

You will recall from Section 2.4 that many of the stress-inducing occupational characteristics that have been identified as “unique” to law-enforcement officers (Ryan, 1997) are, in fact, shared by armoured guards. While this study is primarily concerned with understanding and preventing predatory crime directed towards armoured guards, identifying and responding to sources of job-related stress may lead to increases in job performance and personal wellbeing.

Minimizing the Negative Consequences of Stress

Equipping officers with the ability to reduce the impact of job-related stress is important for ensuring not only their own quality of life, but that of their families as well (Roberts and Levenson, 2001; Ryan, 1997). Techniques developed to help offset the stress associated with a profession in law enforcement would likely be of benefit to armoured guards, who share many of the occupational characteristics identified by Ryan (1997) as causing stress for police officers. One such technique, Cognitive Behavioural Therapy (CBT), has been recognized as an effective method of reducing stress, depression, and anxiety among police officers (Dunn and Cahill-Canning, 2005; Sarason et al., 1979), and is useful for its ability to be implemented by the individual to address

short-term problems while on-duty (Dunn and Cahill-Canning, 2005, pg. 2). CBT has also been associated with increased job performance by police officers, though this approach was found to work most effectively when tailored to the specific stressors officers are likely to face (Sarason et al., 1979, pg. 594). Given that armoured guards share many of the stressors as police officers, such techniques may be useful for reducing stress among armoured guards, thereby improving both their quality of life and job performance.

2.5 The Current Study

Currently, there is very little information available regarding the ways in which armoured guards are victimized, who engages in criminal acts against armoured guards, or what can be done to prevent such acts from occurring.

As such, the purpose of this study is to uncover the circumstances in which guards are most vulnerable to attack, and to develop suggestions that can be utilized by companies specializing in the delivery of high-value commodities to reduce the likelihood of victimization. This study will not only help to prevent the loss of valuable commodities to criminal activity, but also improve the working environment and safety for armoured guards, as well.

This study will address the following three research questions:

1. How often, and to what extent, are armoured truck guards subject to violent victimization?
2. What factors increase the likelihood of violent victimization of armoured truck crews?

3. What steps can be taken to reduce the risk of violent victimization of armoured truck crews?

Ultimately, the results of this study will be useful in understanding and preventing the victimization of armoured guards. It will also contribute to the Routine Activities literature by assessing the suitability of this theory as an explanation for the victimization of armoured guards, and as a foundation for recommendations for improving the safety of front-line personnel.

2.6 Conclusion

To summarize, I began this chapter by describing the core concept of Routine Activities Theory - more specifically, the understanding that crime is the outcome of the convergence of motivated offenders and suitable targets during an absence of capable guardians, facilitated by the everyday activities of each of these parties. I then discussed the importance of CRAVED targets and the use of CPTED as a crime-prevention technique. After outlining the suitability of Routine Activities Theory as a perspective for understanding and preventing the victimization of armoured guards, I discussed the extant literature relating to the victimization of armoured guards and police officers, as well as literature relating to the impact of job-related stress on the lives of these groups. I noted that while a small body of literature has investigated the experiences of armoured guards, much remains unknown. With this in mind, I described how the current study will build upon and extend what is known about the victimization experienced of armoured guards by addressing three main research questions. I turn now to Chapter Three, in which I discuss the data, sample, and methods used to answer my research questions.

Chapter 3: Data and Methodology

3.1 Introduction

This chapter describes the data, sample, analytic strategy, and key measures used in this study to determine the prevalence of victimization experienced by on duty armoured truck personnel, as well as to identify factors that increase or decrease the likelihood that a violent incident will occur. I begin by discussing the type of data needed to explore this issue. Next, I outline my sampling strategy, data collection procedures, analytic technique, and key measures. Finally, I discuss their respective implications for advancing and/or limiting my study of the violent victimization of armoured truck personnel.

3.2 Making Contact

In order to gain an “inside” perspective into the victimization of armoured truck guards, this study focuses on the self-reported experiences of individuals who are currently employed at an armoured truck company, rather than soliciting information from incarcerated offenders and aggregate police data.

Since 2008, I have been employed in a front-line position with a company specializing in the transportation of cash and other high-value items. As a result of this pre-existing relationship, I was able to make direct contact with representatives of the company’s corporate security and training divisions. The representatives of these divisions - and, by extension, the company as a whole - were invited via an internal memorandum to participate in an academic study focusing on improving the safety of front-line employees that would offer potential benefits to both the academic community,

the company, and its employees.

The response to the invitation was extremely positive, though my primary liaison within the company refused to submit the invitation to senior management until concerns relating to corporate security, labour-relations, and participant anonymity had been addressed. After a one-on-one meeting and several subsequent emails, an agreement was reached whereby a research proposal would be submitted to senior management, provided that four conditions were adhered to throughout the research process.

The first condition stated that in order to ensure participant anonymity and to protect the company's professional image from unintended injury, neither the company, its employees, nor the cities in which it operates were to be referred to by name.

Second, under no circumstances would employees be allowed to remove questionnaires or other data-collection tools from the location in which they were distributed. This was to prevent the accidental dissemination of information that could allow offenders to identify and exploit flaws in the operational procedures designed to safeguard the valuables under the protection of the company.

The third condition specified that employees could not be asked, in explicit detail, about the ways in which they had been victimized (for example, "Have you ever been punched, slapped, kicked, or shoved while on duty?"), as it was suggested that a wayward copy of the questionnaire containing such questions could be used by the union representing the employees to distort or inflate the level of risk inherent in carrying out day-to-day duties.

The final condition was a practical one - that data collection was not allowed to interfere with day-to-day operations, and could only be undertaken with the approval of

the branch manager.

These restrictions, naturally, placed limitations on how and when it would be possible to engage potential respondents and gather information relevant to the victimization of armoured truck crews, but were necessary in order to gain access to respondents and did not have any negative effects on the validity of the data. After modifying the questionnaire to conform to the agreed-upon conditions, identifying potential data-gathering sites, and discussing the appropriate disclosure of information following the completion of the study, a proposal of the project was sent to the company's board of directors. Permission to begin data collection was granted via email on March 15, 2012.

3.3 Ethical Concerns

Ethical standards mandate that employees be given the choice to participate or, conversely, to select out of research studies, meaning that my sample would ultimately remain self-selected (Government of Canada Panel on Research Ethics, 2005). All areas of this study, including the changes made to the questionnaire after contacting the company, were conducted with the full knowledge and approval of the University of Guelph Research Ethics board.

To prevent the theft or loss of data, which could present a threat to the anonymity of the respondents, as well as a threat to the company's professional reputation, the questionnaires were stored in an opaque, locked metal box which was kept within arm's reach at all times when at the survey site - or, when in transit, in the locked trunk of my personal vehicle. When not in transit or in use, the questionnaires were kept in a locked

safe built to store, and prevent unauthorized access to, firearms. The same storage and transportation conditions applied to the external USB drives housing back-up copies of the questionnaire, consent documents, and data-analysis results.

Representatives from the company emphasized not only the protection of data relating to corporate security, but also the importance of protecting the identity of respondents internally - that is, ensuring that their choice to participate in the study, as well as any identifying information they chose to disclose during the data-collection process, remain unreported to their coworkers or company management. To this end, it was agreed that all of the information collected during the course of the project would remain my property, and that recommendations for changes in training, company policy, or operational procedures would only come from publicly-available data resulting from publication. This ensured that this study was conducted without undue external influence and complete academic independence.

3.4 The Survey

The primary tool for data-collection was a questionnaire employing open- and close-ended questions. As Kraska and Neuman (2008) explain, a key benefit of this method of data-collection is that it can be conducted by a single researcher for a relatively inexpensive cost. This was also an appropriate method of gathering detailed information from respondents without conducting face-to-face interviews, which were forbidden by the University of Guelph Research Ethics Board. More specifically, the Research Ethics Board was concerned that due to my status as a present, past, and potentially future co-worker of many of the respondents, face-to-face interviews would

make protecting respondent anonymity impossible.

The survey questionnaire was organized into six sections. The first section of the questionnaire asked respondents to report basic demographic information, including their age, sex, and the length and status of their employment with the company. The questions in the second section asked respondents to indicate when they felt safest, based on the time of day and the position they were assigned.

Section three contained questions relating to victimization incidents that had occurred in the past five years. Respondents were asked to indicate how many times they felt threatened while working, how many times someone had attempted to cause them injury, and how many times they had been subjected to an attempted or successful robbery. They were also asked to describe these incidents in as much detail as possible, in their own words.

This section was designed to provide an aggregate count of the number of incidents reported by employees for use in statistical analysis, with the hope of obtaining theoretically-significant information from the employee's own description of an event's act-sequence. For the vast majority of the employees who elected to complete the questionnaire (87.3%), the completion of this section marked the end of their participation in this study.

Respondents who reported serious victimization experiences, such as a threat involving a weapon or an assault, were asked to complete sections four and five of the questionnaire. The responses to these questions were used to facilitate the application of Felson's (2002) *predatory sequence* (pg. 23) to the event, in order to examine it through the lens of Routine Activities Theory. More specifically, questions regarding the

geographic qualities of the site in which the incident took place, including the respondent's physical distance from various landmarks (for example, the company vehicle) at the time of the incident, were used to determine if the ineffective use of *natural strategies*, the use of *camouflage*, or the presence of an *audience* contributed to the event. Environmental factors, including the season, time of day, and weather at the time of the incident were also included.

The questions in section five were designed to facilitate a comparison, based on the same environmental, geographic, and behavioural factors, of the time the incident described in section four took place and the last time the respondent had visited the site without incident. By attempting to identify and isolate the variables that correlate with an increased likelihood of victimization among armoured guards, it is possible to identify strategies for reducing the likelihood of future victimization.

Questions regarding the activities that the participant and their co-worker (if one was present) were engaged in, as well as the behaviour of, and *tools* (in this case, weapons) employed by the offender(s) were used to determine whether or not they fit the role of a *suitable target*, *capable guardian*, and *motivated offender*, respectively. Other questions in this section asked respondents to recall the severity of any injuries they suffered as a result of the incident, the sex, ethnicity, and age of the offenders, and any behaviour indicating that the offenders were mentally disturbed or under the influence of illicit substances.

Section six simply thanked the participants for completing the survey, and encouraged them to contact me if they had follow-up questions or concerns.

Once the final draft of the survey was complete, four branches of the armoured

truck company were invited to participate in this study. These branches were chosen through non-theoretical means, based on my familiarity with their day-to-day operations and organizational structure, as well as geographic convenience and their ability to accommodate me in a timely manner. The four branches were also chosen because they are the largest branches in the province⁵, and thus comprise the largest number of potential respondents available. Being able to access a large number of respondents quickly was particularly important, given the temporal and economic limitations of this study. Unfortunately, the largest of these branches could not be included due to time constraints and a lack of cooperation from branch-level management. The limitations placed on the ability of future researchers to generalize the findings of this study to other armoured guard populations, including the use of a non-random sample, as well as the exclusion of the most-populated branch, will be discussed in greater detail in later chapters.

The date and time that the questionnaires were distributed at each location were negotiated in advance with branch managers, or, in the case of City B, personnel from the training division acting on their behalf, to ensure that day-to-day operations would not be significantly impacted. At each location, I greeted respondents by introducing myself and providing a short introductory speech describing the purpose of the study, an overview of the letter of information and consent documents, and instructions on how to complete the questionnaire. Although the potential respondents were made aware that I am an

⁵ In the interest of ensuring the company's anonymity, it is worth noting that, according to Statistics Canada (2011), the branches invited to participate are not located in the four most-populated cities in Ontario.

employee of the company, they were assured that this study was not under the control of the company, that their questionnaires would not be examined by company representatives, and that their job status would in no way be influenced by their decision of whether or not to participate. Finally, in order to obscure who had, and who had not, participated in the study, the potential respondents were instructed to leave their questionnaires face-down once they were finished. On several occasions, respondents requested that I clarify the instructions provided on the questionnaire or the meaning of specific questions, though the vast majority of participants completed the first three sections of the survey in five minutes or less. The participants who reported that they had experienced a significant incident and elected to complete the entire questionnaire typically spent 15 to 20 minutes doing so.

The questionnaires were distributed to the employees of City A during a union-organized workshop on the subject of building a respectful workplace with regards to differences of ethnicity, gender, and other issues. This workshop was held at the local Union Hall, and though attendance was mandatory for all of the employees, they were divided into two groups based on their preferred day of attendance (either Saturday or Sunday). During the last “coffee break” on both days, when the employees were away from their seats, I placed a copy of the questionnaire, consent form, and letter of information face-down on the table in front of each of their seats. Once they had returned, I introduced myself and the documents as outlined above.

The questionnaires were distributed to the employees of City B during the bi-annual firearms re-qualification, which began on a Tuesday morning and continued until Saturday afternoon. Over the course of the day, employees arrived in pre-scheduled

groups of two to six to complete a short written test, as well as the mandated course of fire. In order to ensure that the re-qualifications were completed without significantly deviating from the schedule designed by the training officers, and to ensure that the employees would not be distracted from their task, I elected to wait until all of the members of a given group had completed their re-qualification before introducing myself. After the employees had completed their written tests and moved to the adjacent firing range, I placed copies of the questionnaire, letter of information, and consent form on the table in the center of the room. Once they had returned, I introduced myself, explained the purpose of the study and described each of the documents, and indicated that anyone who was interested in participating in this study would find the necessary documents on the table.

The potential for data-collection in City C was, unfortunately, limited by time constraints and a lack of opportune union-organized events, re-qualifications, or other meetings with a high rate of attendance.

The questionnaires were distributed on a Tuesday afternoon between the hours of 2:30 pm and 6:30 pm, when the day-time crews were returning to the branch and the night-time crews were preparing to begin their shifts. As the employees arrived at the branch (typically in groups of two or three), I introduced myself, explained the purpose of the study, and described the corresponding documents before indicating that I would be in a nearby office if they wished to participate.

3.5 Sample

A total of 127 employees participated in the study. The majority of the

participants were employed in City B (n=64, 50.4%) , which houses the highest number of employees (n=100). City A, the city with the fewest employees (n=52), yielded 43 respondents (33.9%), while City C, though housing 80 employees, provided the fewest respondents (n=20, 15.7%) (Appendix E). The discrepancy between the number of employees in, and the number of respondents from each city can likely be attributed to the necessity of seeking respondents from each location as the opportunity arose, rather than having the opportunity to approach all of the potential respondents at once. The impact of this discrepancy on the generalizability of my findings will be discussed in a later chapter.

The vast majority of the respondents (n=104, 81.9%) were male, while 23 (18.1%) were female (Appendix E). Though records indicating the ratio of male-to-female employees in the company were not made available, this distribution appeared to be consistent with the sample population as a whole⁶. There was a wide variation in the age of respondents, the oldest indicating that they were 68 years old, and the youngest indicating that they were 20. Overall, there was one (.8 percent) respondent under the age of 21, 30 (24 percent) between the ages of 21 and 30, 42 (33 percent) between the ages of 31 and 40, 22 (17 percent) between the ages of 41 and 50, and 27 (21 percent) over the age of 50. The remaining five respondents (4 percent) either chose not to indicate their age, or did not provide an appropriate response (for example, indicating their city of employment, rather than their age).

At the time the data were collected, 82 of the respondents (64.6%) were working

⁶ Note that this claim a personal observation based on my experience as an employee of the company.

as full-time employees, 39 (30.7%) were employed on a part-time basis, and six (4.7%) were working in temporary full-time positions (Appendix E). Length of employment was positively correlated with the number of respondents - 53 (41.7%) indicated that they had been employees of the company for over ten years, 32 (25.2%) had been employees for five to 10 years, 30 (23.6%) for two to five years, and 12 (9.4%) for less than two years.

In summary, the data indicates that the armoured guards included in the sample population are primarily male, employed on a full-time basis, have worked for the company for over ten years, and were born between 1970 and 1989, indicating that they are between 32 and 34 years of age. It should be noted that it was not possible, in this study, to draw upon a random sample.

Once the employees learned that this study was created by one of their peers with the aim of improving their on-the-job experience, their response was overwhelmingly positive. While many employees chose not to complete the questionnaire, most of them attributed their non-participation to time constraints resulting from an imminent shift, obligations at a secondary place of employment, or childcare. Whether these were honest excuses or simply an attempt to politely decline to participate cannot be known, though it is worth noting that only one non-participant expressed outright disinterest.

3.6 Data Analysis

The information collected from the surveys was coded into *IBM SPSS Statistics 21* and used to create two datasets. The first is a person-based dataset using the individual as the unit of analysis. It includes variables measuring the respondent's demographic and occupational characteristics, as well as the number of times they had been threatened, or

been the victim of an attempted or successful robbery or an attempt to cause them physical harm, while on the job. The number and type of incidents reported by respondents was used to answer the first research question outlined earlier in this chapter - that is, how often, and to what extent, armoured guards are subjected to violent victimization. The demographic information was collected not only to determine the general characteristics of the sample population, but also to determine if any of these variables affected their likelihood of victimization - thus helping satisfy the second research question.

A second, incident-based dataset was created using a subset of the respondents comprising the person-based dataset - specifically, only respondents who provided additional information regarding a significant victimization experience were included. The data collected from section four of the questionnaire - that is, data relevant to the victimization experience - were used to create “incident” cases, while the data collected from section five - data relevant to the variables at play the last time they had visited the site *without* experiencing an incident - were used to create “non-incident” cases⁷. By comparing “incident” cases to “non-incident” cases, it was possible to determine if theoretically-significant environmental variables facilitated or inhibited the act of victimization, to indicate whether behavioural variables made the respondent a suitable or unsuitable target, and to discover if an increased or decreased level of guardianship affected their likelihood of victimization. These data were used to address the second

⁷ Note that one of the respondents who reported a significant victimization experience stated that it occurred the first time they had visited the location. Because of this, there is one more “incident” case than “non-incident” cases.

research question, and facilitated the creation of recommendations to reduce the likelihood that armoured guards would be victimized in the future - thus addressing the third research question.

The “incident” cases and “non-incident” cases were compared using bi-variate cross-tabulations. Chi-square tests were used to determine whether statistically significant differences existed in each relationship under investigation by testing for statistical significance in the correlation of environmental, behavioural, and geographical features that are considered significant in Routine Activities Theory, and whether or not an incident occurred.

It is impossible to conclusively state that the observed correlations between the variables and the likelihood of victimization, found through the use of the chi-square test of independence, are not influenced by variables that are outside the scope of the questionnaire and cannot be controlled for. Multivariate statistical techniques... can provide valuable evidence in support of causal arguments (Healy and Prus, 2010), but the relatively few reported violent incidents (N=19) prevented such analyses. As a result, it was not possible to conduct multi-variate regression analyses, which would have allowed for a better understanding of the strength and direction of the relationships observed in the data (Healy and Prus 2010).

3.7 Key Measures

The key measures in this study are informed by theory and empirical findings, discussed in Chapter Two, that suggest the factors that are linked to an increased likelihood of armoured guards experiencing a violent incident. The measures are derived

from the survey instrument described above.

Dependent variable: A simple dichotomous variable was used to define and operationalize the victimization experiences of armoured guards: that is, whether or not respondents had been victimized while on duty in the past five years. An on-the-job-incident was classified as an act that made the respondent feel threatened while on duty, an attempt cause the respondent injury while on duty, or an attempt to remove cash or other valuables from the respondent's control while on duty.

Independent variables: There are 25 independent variables included in this analysis. These variables can be separated into 3 broad categories: demographic characteristics, occupational characteristics, and Routine Activities variables. Routine Activities variables were further sub-divided based on their relevance to geographic/environmental factors, the suitability of the target, and the level of guardianship afforded to the target. A description of the variables, including how they were coded, is included in Appendix E.

Demographic and Occupational Characteristics

Sex: According to 2008⁸ data from the Canadian Centre for Justice Statistics, male victims were over-represented in the categories of assault with a weapon, assault causing bodily harm, aggravated assault, robbery, and homicide (2010). Given that 81.9% the respondents identified as "male" (N=104), it is possible that armoured guards as a

⁸ Although there was a decline in the number of violent offences reported to police between 2008 and 2011 (Statistics Canada, 2012B), there is nothing to suggest a change in the ratio of male-to-female victims.

group are at an increased risk of victimization over the general public.

Age: A report by Statistics Canada (2012A) using data collected from the 2009 General Social Survey revealed a negative relationship between the rate of violent victimization and age, with individuals between the ages of 15 and 24 more than ten times as likely to be the victim of violent crime than those over 55. By identifying any correlations between the age of the participants and their likelihood of being victimized while on duty, it is possible to determine if the findings by Statistics Canada (2012) can be generalized to armoured guards.

City of Employment: Kaminski (2008), in his study of the homicide of police officers, discovered that the likelihood of homicide increased relative to the economic disadvantage of the region in which the officers carry out their duties. It is possible that because armoured guards are tasked with transporting cash and high-value liability, offenders residing in economically-disadvantaged areas may be motivated to seek them out to engage in a robbery attempt.

Length of Employment and Occupational Status: While there is no extant evidence to support the idea that armoured guards face an increased or decreased likelihood of violent victimization based on their length of employment or employment status, simple extrapolation of Felson's theoretical claims suggest that prolonged exposure to settings conducive to criminal activity while in the possession of items that fulfill the requirements of the C.R.A.V.E.D. paradigm may increase the likelihood of violent victimization. As a result, there may be a correlation between the length of one's employment and their status as a full-time, part-time, or temporary full-time employee. Conversely, more experienced employees may be more likely develop pro-active

strategies to avoid potential dangers, leading to a decreased risk of victimization. Both of these explanations have been used to account for the apparent decrease in the likelihood of assault experienced by police officers who have more than seven years of experience (Mayhew, 2001).

Routine Activities Variables

Felson (2002) identified three “*almost-always elements*” that are present during a criminal act: there will be a likely offender, a suitable target, and the absence of a capable guardian (pg. 21). The “almost-always” elements of a crime are typically “supplemented by... *often-important elements*” (pg. 22) that form a “suitable setting” (pg. 20), including “props” (such as tools or weapons) used to facilitate or inhibit the criminal act, camouflage used by the offender to avoid detection, an audience that the offender has the desire to impress or intimidate. Environmental or geographic factors, such as a lack of natural surveillance resulting from poor lines-of-sight (pg. 138), insufficient lighting (pg. 153) or a lack of access control (pg. 126) were identified by Felson as “crime attractors” (pg. 24) that make an area more conducive to criminal activity. In order to test the validity of these claims in relation to the violent victimization of armoured truck crews, the following variables were included in the study⁹:

Geographic Variables

⁹ The inclusion of the “Number of Bystanders” variable in both the Environmental and Level of Guardianship categories was due to the variable’s theoretical significance in both of these areas.

Visibility of Destination: Felson identified the lack of natural surveillance resulting from poor lines-of-sight (pg. 138) as an environmental “crime attractor”(pg. 24). For armoured guards, especially those without a partner, a poor line-of-sight to one’s destination could present a substantial risk by providing offenders with multiple areas of camouflage. Asking respondents if they could see their destination at the time of the incident, or if their line-of-sight was blocked because of vending machines, vehicles, kiosks, trees, benches, or because it was around a corner, allowed for an evaluation of whether or not this was a contributing factor to the likelihood of violent victimization.

Poor footing, inadequate lighting, and poor overall maintenance: These variables were included to assess the extent to which environmental “crime attractors” can make a setting more conducive to criminal activity and, subsequently, the victimization of armoured guards.

Environmental Variables

Level of Pedestrian Traffic and Level of Vehicle Traffic: For the purposes of this study, high levels of pedestrian or vehicle traffic were used to indicate whether the area in which the incident occurred had poor access-control, which was identified by Felson as an important environmental “crime attractor” (pg. 126). It is also possible that high levels of pedestrian or vehicle traffic are indicators of a high level of guardianship in the form of potential witnesses.

Noise Level: Felson noted that noise “reminds us that crime is a physical act and that our five senses are essential for both committing it and preventing it” (pg. 128). A noisy environment could be used to mask an offender’s approach, or serve as a

distraction for the target. In a particularly quiet area, noise can serve as a deterrent to crime by ensuring that an attempt to victimize a target would draw the attention of others - Felson's example of subway personnel using loudspeakers to direct individuals to cease undesirable behaviour (2002, pg. 128) could be likened to armoured guards verbally engaging potential offenders.

Target Suitability¹⁰

Using a Hand-Cart to Delivery Liability, Using an Empty Hand-Cart, Carrying Parcels Concealed in a Canvas Bag, Carrying Parcels Not Concealed in a Canvas Bag, Number of Parcels/Coin Boxes Being Carried: Gill (2001) notes that offenders engaged in cash-in-transit robberies are "rational actors that need to weigh up the benefits and disadvantages of each venture, (as) the costs for getting it wrong can be high" (pg. 287), and that they "will consider a robbery successful if the financial gains meet or exceed their expectation" (pg. 281). For potential offenders, a guaranteed "payoff" could swing their cost-benefit analysis in favour of engaging in a robbery attempt. Determining the presence of cash parcels, coin, or other liability that fulfills the requirements to be CRAVED (especially if it was conspicuously displayed) was, therefore, essential when evaluating the suitability of the target at the time of the incident. A hand-cart, whether it is empty or being used to transport valuables, may also serve as a physical barrier to potential assailants, symbolically increasing what Hall (1966) referred to as the target's

¹⁰ This study did not test for correlations between the type of weapons carried by the guards and their likelihood of victimization as, in accordance with company policy, all of the respondents would have been carrying the same make and model of firearm while on duty.

“personal space” (thereby drawing the target’s attention to whomever violates that space), and signal to offenders that the target is unlikely to be in possession of large-enough quantities of liability to make a robbery attempt worthwhile. An empty hand-cart could also serve as a distraction, decreasing a guard’s awareness of their surroundings and making them a more-suitable target.

Wearing Body Armour: In their study of the victimization of police officers, Fridell et al. (2009) noted that departments encouraging the use of body armour actually saw a marked increase in the number of assaults and homicides, but noted that the increased use of body armour may have been in response to already high levels of assault and homicide. Whether body armour serves as a form of effective “target-hardening” for armoured truck personnel, or increases their likelihood of victimization, will be assessed.

Guardianship Variables

Presence or Absence of a Partner, Presence of Other Crew Members Outside the Company Vehicle, and Presence of Police or On-site Security: The presence or absence of individuals who had a direct interest in ensuring the respondent’s safety at the time of the incident (or, at least, in preventing criminal activity) served as an indicator of the level of guardianship that the respondent was afforded. This information was important in determining whether or not one of the major “almost-always” elements that plays a major role in general criminal behaviour could also be applied to the violent victimization of armoured guards.

Number of Bystanders: It is possible that bystanders could meet Felson’s definition of a “crime attractor” by serving as an audience, or as camouflage, should the offender conceal him/herself among them before engaging the target. This idea is

supported by anecdotal evidence provided by some of the offenders in Gill's (2001) study, who claimed to have taken people other than the armoured truck crew hostage as part of a robbery, turning bystanders into "props" (pg. 287).

Knowing the number of bystanders present at the time of the respondent's victimization experience was also important when evaluating their level of guardianship. Felson notes that "even strangers can serve as guardians by being nearby" (pg. 22), a statement that is supported by one of the offenders interviewed by Gill (2001) who expressed a preference for attacking armoured truck crews in isolated areas (pg. 281). For this reason, it was important to compare the number of bystanders in the area at the time of the incident, and the number of bystanders in the area when an incident did not occur.

3.8 Conclusion

In this chapter I have outlined the sample and data collection for my research. Specifically, analyzing data collected from a survey administered to armoured guards currently working in three branches in Southern Ontario will allow me to investigate the victimization experiences they face while on duty. Using the descriptive and bi-variate statistical techniques described above will enable me to determine how often, and to what extent, armoured truck crews are subject to violent victimization, and identify the factors that are associated with an increased risk of victimization. I turn now to presenting my research findings in Chapter 4.

Chapter 4: Analytic Results

4.1 Introduction

This chapter presents the results of the bi-variate analyses to determine the extent to which the victimization of armoured guards is associated with demographic and occupational characteristics, as well as situational characteristics considered significant in Routine Activities Theory. It begins by presenting the summary data relating to the sample population's reported on-the-job incidents. The next section presents the results of the bi-variate analyses used to determine the correlation between the variables included in the person-based and incident-based datasets. More specifically, in Section 4.2, the results for the demographic and occupational variables are presented, followed by the results for the geographic and environmental variables (Section 4.3), target suitability (Section 4.4), and guardianship (Section 4.5).

4.2 Summary Data

Reported incidents and perceptions of on-the-job safety

In order to determine if the participants' perceptions of on-the-job safety accurately reflected when on-the-job incidents were most likely to occur (or not), the participants were asked to indicate the job role in which they felt safest, as well as the time of day they felt was the safest to work. Overall, there was no consensus regarding the type of job role that was safest, but there was a strong consensus regarding the situational factors that were safest. For example, thirty-three respondents (26 percent) indicated that they felt safer while working as an ATM technician than as an armoured

messenger, 18 (14 percent) stated the opposite, and the remaining 75 (60 percent) stated that they felt no difference (Appendix E). In contrast, 14 percent (n=18) stated they felt safest while working as an armoured messenger, because messengers typically work during daylight hours. Similarly, 26 percent (n=33) stated they felt safer while working as an ATM technician, because they were guaranteed to work with a partner.

When the respondents were asked to indicate their views on how the time of day affected their feeling of safety, independent of the job position, the results were mixed. Fifty-two respondents (42 percent) indicated that they felt safest working between the hours of 6 AM and 5:59 PM, regardless of the position they were assigned, with only 13 (10 percent) indicating that they felt safest between 6 PM and 5:59 PM. The largest group of respondents (47 percent; n=59) stated that they did not perceive a difference in safety based on the time of day (Appendix E). Several respondents did not provide an answer to this question. This may have been the result of some respondents who attempted to complete the questionnaire as quickly as possible. This, in turn, may have been due to the length of the questionnaire (which was 11 pages), or because the respondents had never experienced an on-the-job incident and felt that they would have little to contribute.

In order to address the first research question about the frequency and extent of victimization faced by armoured guards, the respondents were asked to indicate the number and type of on-the-job victimization incidents they had experienced in the past five years. A total of 19 respondents (15 percent) reported 58 incidents in which an individual threatened them using words or aggressive body language. A male respondent between the ages of 23 and 32 who worked in City A reported that “a large man crept up behind me and screamed very loudly and walked away laughing.” This report suggests

that while the offender clearly intended to harass the respondent, he did not intend to cause the respondent physical harm. The experience of a second respondent, who was a female, aged 23-32, and working in City C, explicitly demonstrates the offender's intent to follow through on a threat of violence: "At about 2 AM, I had a guy threaten to 'kick my blonde ass' because he thought I stole his ATM card and took his money. He waited outside the door for me. (...) I called the police (...) and he was arrested." There were only two incidents of attempted physical violence, and four robbery attempts, in the past five years (Table 4.1). Of the 19 respondents who reported these incidents, 53 percent (n=10) stated that they had reported their "most significant" incident to a supervisor, 21 percent (n=4) stated that they had not, and the remaining 26 percent (n=5) did not provide a response (Appendix E).

Table 4.1 Number and Types of Reported Incidents

Type of Incident	Number of Incidents (N=64)	Percent
Threat	58	91
Attempt to cause injury	2	3
Attempt to remove valuables	4	6
Totals	64	100

In the interest of uncovering correlations between weather, the time of day, time of week, and time of year and the likelihood of experiencing an on-the-job incident, these 19 respondents were asked to provide additional information about the incident that they deemed to be the most significant. Of the 19 eligible respondents, 11 (58 percent) provided responses. The majority (64 percent; n=7) indicated that the incident occurred

on a weekend (between 5:00 PM on Friday and 11:59 PM on Sunday), and 36 percent (n=4) indicated that it occurred during the week (between 12:00 AM on Monday and 4:59 PM on Friday). The incidents were spread fairly evenly across different seasons. The highest number of incidents took place in the Summer (36 percent; n=4), followed by Winter (27 percent; n=3), with the fewest occurring in Spring and Fall (18 percent; n=2 for each). When asked to describe what the weather was like at the time of the incident, most of the respondents provided answers: seven (70 percent) indicated that the weather was unremarkable, one (10 percent) indicated that it was lightly snowing, two (20 percent) indicated that it was particularly warm (over 25° Celsius) (Appendix E).

Respondents were also asked to describe the offenders involved in their most serious on-the-job incident (Appendix E). The majority reported that there was a single offender (73 percent; n=8), while incidents involving multiple offenders were reported far less frequently. Two respondents (18 percent) reported that there were two offenders, and one respondent (9 percent) indicated that there were between three and five offenders.

The characteristics of the offenders were fairly homogeneous. As shown in Appendix E, all of the offenders were male, and the majority were white (64 percent; n=7) and acted alone as sole perpetrators (63 percent; n=5). In the majority of incidents, the offender was unarmed (88 percent; n=7), though one respondent indicated that they were threatened with a firearm. Respondents gave varied replies when asked if they believed that the offenders were intoxicated or under the influence of illicit substances. There was an even distribution of “Yes” (27 percent; n=3) and “No” (27 percent; n=3) answers, though the largest group of the respondents (46 percent; n=5) indicated that they were unsure. Only one respondent believed that his attacker displayed behaviour

indicative of a mental disorder.

As has been noted in previous chapters, scholars have emphasized the important role that the physical environment plays in determining target suitability and capable guardianship, and in the offender's decision-making process (Appendix E). Accordingly, respondents who had experienced an on-the-job incident were asked to indicate where they were positioned at the time of the incident. There were mixed results among the respondents who indicated their distance from their destination (either an ATM or a customer's "cash office") at the time of the incident. The largest group (44 percent; n=4) stated that they were less than 20 feet away, 22 percent (n=2) stated that they were between 20 and 50 feet away, and 33 percent (n=3) stated that they were more than 50 feet away. It is interesting to note that of the 10 respondents who indicated their proximity to the company vehicle at the time of the incident, 60 percent (n=6) were less than 20 feet from the vehicle, 30 percent (n=3) were between 20 and 50 feet of the vehicle, and 10 percent (n=1) were more than 50 feet away. For the seven respondents who indicated that they were working with a partner at the time of the incident, five (71 percent) stated that they were less than 10 feet from their partner, one (14 percent) was between 10 and 30 feet from his partner, and one (14 percent) was more than 30 feet from his partner.

None of the respondents who reported having experienced an on-the-job incident indicated that they suffered a physical injury, and only two (11 percent) reported suffering emotional distress. It should be noted, however, that nine of the respondents (47 percent) did not answer this question (Appendix E).

4.3 Bi-variate Analyses: Individual-level characteristics

A cross-tabular analysis using Pearson's chi-square statistic was used to assess potential relationships between 24 demographic and occupational characteristics with the experience of being a victim. The results are shown in Table 4.2, and discussed in further detail below.

Table 4.2: Bi-Variate Relationships: Demographic, Occupational, Geographic, Environmental, Target Suitability, and Guardianship Characteristics by Incident/Non-Incident

	Variable Name and Coding	Incident N (%)	Non-Incident N (%)	<i>p</i>*
Demographic Variables				
<i>Sex</i>	Male (0)	16 (76%)	88 (83%)	.535
	Female (1)	5 (24%)	18 (17%)	
<i>Age</i>	Under 21 (0)	0 (0%)	1 (1%)	.104
	21 - 30 (1)	7 (33%)	23 (22%)	
	31 - 40 (2)	11 (52%)	31 (29%)	
	41 - 50 (3)	2 (10%)	20 (19%)	
	Over 50 (4)	1 (5%)	26 (25%)	
	Missing	0 (0%)	5 (5%)	
Occupational Variables				
<i>City of Employment</i>	City A (0)	12 (57%)	31 (29%)	.035
	City B (1)	8 (38%)	56 (53%)	
	City C (2)	1 (5%)	19 (18%)	
<i>Length of Employment</i>	Less than 2 years (0)	2 (10%)	10 (9%)	.021
	2 to 5 years (1)	8 (38%)	22 (21%)	
	5 to 10 years (2)	8 (38%)	24 (23%)	
	More than 10 years (3)	3 (14%)	50 (47%)	
<i>Employment Status</i>	Full-time (0)	14 (67%)	68 (64%)	.361
	Part-time (1)	5 (24%)	34 (32%)	

	Temporary full-time (2)	2 (10%)	4 (4%)	
Geographic Variables				
<i>Destination Visibility</i>	Direct line of sight (0)	10 (100%)	3 (33%)	.007
	L.O.S. broken by obstacles (0)	0 (0%)	0 (0%)	
	L.O.S. broken by corner (1)	0 (0%)	5 (56%)	
	Missing	0 (0%)	1 (11%)	
<i>Time of Day</i>	Midnight - Sunrise (0)	1 (10%)	1 (11%)	1.00
	Sunrise - Noon (1)	0 (0%)	1 (11%)	
	Noon - Sunset (2)	6 (60%)	5 (56%)	
	Sunset - Midnight (3)	3 (30%)	2 (22%)	
Environmental Variables				
<i>Noise Level</i>	Noisy (0)	2 (20%)	2 (22%)	1.00
	Not noisy (1)	8 (80%)	7 (78%)	
<i>Pedestrian Traffic</i>	High (0)	6 (60%)	6 (67%)	1.00
	Low (1)	4 (40%)	3 (33%)	
<i>Vehicle Traffic</i>	High (0)	2 (20%)	3 (33%)	.628
	Low (1)	8 (80%)	6 (67%)	
<i>Number of Bystanders</i>	None (0)	2 (20%)	2 (22%)	1.00
	1 - 5 (1)	6 (60%)	5 (56%)	
	More than 5 (2)	2 (20%)	2 (22%)	
Target Suitability Variables				
<i>Wearing Body Armour</i>	Yes (0)	7 (70%)	5 (56%)	.650
	No (1)	3 (30%)	4 (44%)	
<i>Using a Hand-Cart to Deliver Liability</i>	Yes (0)	2 (20%)	2 (22%)	1.00
	No (1)	8 (80%)	7 (78%)	
<i>Using an Empty Hand-Cart</i>	Yes (0)	0 (0%)	1 (11%)	.474
	No (1)	10 (100%)	8 (89%)	
<i>Transporting Parcels Concealed in a Bag</i>	Yes (0)	4 (40%)	3 (33%)	1.00
	No (1)	6 (60%)	6 (67%)	
<i>Transporting Parcels Without a Bag</i>	Yes (0)	1 (10%)	0 (0%)	1.00

	No (1)	9 (90%)	9 (100%)	
<i>Transporting Coin</i>	Yes (0)	2 (20%)	2 (22%)	1.00
	No (1)	8 (80%)	7 (78%)	
Guardianship Variables				
<i>Working with a Partner</i>	Yes (0)	7 (70%)	5 (56%)	.650
	No (1)	3 (30%)	4 (44%)	
<i>Only Crew Member Outside of Vehicle</i>	Yes (0)	3 (30%)	3 (33%)	1.00
	No (1)	7 (70%)	6 (67%)	
<i>On-Site Security or Police Present</i>	Yes (0)	1 (10%)	1 (11%)	1.00
	No (1)	9 (90%)	8 (89%)	

Demographic Characteristics

Sex

The percentage of female employees who reported experiencing threats, attempts to cause them physical injury, or attempts to remove valuables from under their control (22 percent; n=5) was slightly higher than the percentage of male employees who indicated the same (15 percent; n=16). However, the respondents' sex was not significantly correlated with their likelihood of victimization ($p=.458$).

Age

Overall, age was not significantly correlated with the likelihood of victimization ($p=.104$). Respondents between the ages of 31 and 40 experienced the highest rate of on-the-job incidents. Of the 42 respondents within this category, 11 (26 percent) indicated that they had experienced an incident while on-duty. Those between the ages of 21 and

30 (n=30), seven of whom (23 percent) reported experiencing at least one on-the-job incident, were the group with the second-highest rate of victimization. Two respondents (10 percent) between the ages of 41 and 50 (n=20) and one (.04 percent) respondent over the age of 50 (n=26) reported an on-the-job incident. The only respondent under the age of 21 indicated that they had never experienced an incident while on duty.

Occupational Characteristics

City of Employment

The first demographic characteristic to be examined was the city of employment. The chi-square test revealed that this variable had a statistically-significant correlation with the likelihood of experiencing an on-the-job incident ($p=.035$). Twelve employees in City A reported experiencing an on-the-job incident, representing 23 percent of the 52 employees at this location and exceeding the expected count of 7.1. Conversely, only eight of the respondents from City B (8 percent) reported an on-the-job incident. Employees in City C were least likely to report an incident, with only one (.01 percent) stating that he had been victimized. The total number of incidents in each city can be found in Table 4.3.

Table 4.3 Total Number of Incidents by City

City	Threats	Attempts to Cause Injury	Attempts to Remove Valuables	Percent
A	45	0	4	77
B	11	1	0	19
C	2	1	0	5
Total	58	2	4	100

There was a wide range in the number of incidents reported by respondents. Indeed, two of the respondents in City A reported being the victims of threats 12 and 18 times, respectively, while the majority of respondents (83 percent; n=106) indicated that they had never experienced an on-the-job incident.

The city of employment was not significantly correlated to specific types of victimization, only the likelihood of victimization overall.

Length of Employment

The length of a respondent's employment was significantly correlated with their likelihood of victimization ($p=.021$). A total of eight respondents who indicated that they had been employed with the company for two to five years reported experiencing an on-the-job incident, as did the eight respondents in the five to ten year category. Those who indicated that they had been employed for more than ten years were significantly less likely to report an on-the-job incident - only three stated that they had experienced some form of victimization. Of the respondents who had been employed for less than two years, two reported experiencing on-the-job incidents.

This data would appear to indicate that armoured truck guards who have been employed between two and ten years are at the greatest risk of on-the-job victimization. One possible explanation is that, over this time period, guards gain additional on-the-job experience and training, allowing them to employ pro-active strategies to limit the possibility of victimization in later years¹¹. It is also possible that guards who are

¹¹ The decreased risk of victimization enjoyed by respondents who were employed for

employed for somewhat longer periods of time have amassed the seniority that grants them access to more favourable (i.e., safer) routes. Unfortunately, it is also possible that guards who have worked for a more than 10 years are more likely to become complacent and fail to recognize legitimate threats from unarmed offenders, or become inured to them, thereby making them less likely to report such incidents.

Job Status

The respondent's job status was not significantly correlated with their likelihood of victimization ($p=.361$).

Of the 82 respondents employed on a full-time basis, 14 (17 percent) indicated that they had experienced an on-the-job incident, as did 5 of the 39 respondents working part-time (13 percent), and two of the six respondents filling temporary full-time positions (33 percent).

In summary, none of the demographic characteristics and two occupational characteristics - city of employment ($p=.040$) and length of employment ($p=.038$) - were significantly correlated with the respondents' risk of violent victimization while on-duty. Although the other demographic and occupational variables - sex, age, and job status - are important characteristics in describing the sample, they were not statistically significant.

less than two years may be attributable to organizational policies that reduce their exposure to criminogenic environments. The impact of these policies will be discussed in further detail in the following chapter

4.4 Bi-variate Analyses: Geographic and Environmental Variables

As discussed in the previous chapter, this analysis was conducted using the information provided by 10 respondents who completed sections 4 and 5 of the questionnaire. You will recall that section four asked respondents to report on geographic, environmental, and Routine Activities variables present during their most significant victimization experience, while section five asked them to report the same information regarding the last time they had visited the same location, before the incident occurred. The data provided by the respondents were used to create two groups - one populated by cases created using their responses to the questions from Section 4 of the questionnaire (referred to as “incident” cases). The second group was populated by cases created using their responses to the questions from Section 5 of the survey (referred to as “non-incident” cases). It should be noted that one of the respondents indicated that the incident occurred the first time they attended their location, and were therefore unable to provide additional information in section five. As a result, there are 10 “incident” cases, and nine “non-incident” cases. It should also be noted that some respondents did not provide valid responses for every question.

Geographic Variables

Destination Visibility

Having a clear line-of-sight to one’s destination was significantly related to the likelihood of experiencing an on-the-job incident ($p=.007$). There were a total of 18 valid cases from the combined “incident” and “non-incident” dataset, as one respondent did not

answer the question in section five.

All of the “incident” cases (n=10) occurred when the respondent had a direct line of sight to their destination. The majority of the “non-incident” cases (63 percent; n=5) indicated that the destination was not visible the last time they entered the location, because it was around a corner, three (33 percent) indicated that there was a clear line of sight to their destination upon arrival, and one respondent (13 percent) did not provide an answer. None of the respondents indicated that their line of sight to their destination was blocked by vending machines, vehicles, trees, benches, or other obstruction (Table 4.2). In total, 13 (72 percent) of the cases indicated that their destination was visible, while 5 (28 percent) stated that it was not.

Lighting, footing, and overall maintenance

None of the “incident” or “non-incident” cases took place in areas reported to have insufficient lighting, poor footing, or poor overall maintenance, meaning that these variables were not significantly correlated with the likelihood of experiencing an on-the-job incident.

Time of Day

The majority of “incident” (n=6, 60 percent) and “non-incident” (56 percent; n=5) cases took place between noon and sunset, or after sunset (30 percent; n=3 and 22 percent; n=2, respectively). The fact that there was no statistically-significant relationship between the time of day and the likelihood of experiencing an on-the-job incident based on a comparison between “incident” and “non-incident” cases (p=1.00) does not

necessarily mean that offenders do not take the time of day into account when planning their activities. Further examination revealed that 78 percent of the respondents who provided the time of day that their on-the-job incident occurred indicated that the last time they visited the location without incident, they arrived within the same window.

Environmental Characteristics

Noise Level

The majority of both “incident” (80 percent, n=8) and “non-incident” (78 percent, n=7) did not take place in environments described by the respondents as “noisy”. Indeed, one of the respondents who reported being held at gunpoint during an attempted area described the area as being “very quiet”. In total, four (21 percent) of the victimization incidents took place in noisy environments, while 15 cases (79 percent) did not.

Overall, the amount of noise at a location was not significantly correlated with the likelihood of experiencing an on-the-job incident ($p=1.00$).

Pedestrian Traffic

For six of the “incident” cases, respondents stated that there was heavy pedestrian traffic, while four (40 percent) indicated otherwise. A similar trend was found within “non-incident” cases, where six (67 percent) respondents noted that the site had heavy pedestrian traffic, while three (33 percent) reported that it did not. In total, 12 cases (63 percent) took place in areas with heavy pedestrian traffic, and seven (37 percent) occurred in areas that did not. This relatively even distribution indicated that level of pedestrian traffic was not significantly associated with the likelihood of experiencing an

on-the-job incident ($p=1.00$)

Vehicle Traffic

The majority of both the “incident” (80 percent; $n=8$) and “non-incident” (67 percent; $n=6$) cases took place in areas without heavy vehicular traffic. Overall, the level of vehicular traffic was not significantly correlated to the likelihood of experiencing an on-the-job incident ($p=.628$).

Bystanders

The number of bystanders at the location did not have a significant relationship with the likelihood of experiencing an on-the-job incident ($p=1.00$). When examining the “incident” cases, two respondents (20 percent) indicated that there were more than five bystanders at the time of the incident, six (60 percent) indicated that there were one to five, and two (20 percent) indicated that there were none. The “non-incident” cases revealed a similar distribution, with two (22 percent) reporting that there were more than five bystanders on-site, five (56 percent) reporting that there were one to five, and two (22 percent) reporting that there were no bystanders present. Overall, four of the cases (21 percent) took place at a time when there were no bystanders present, 11 (58 percent) took place when there were one to five bystanders, and four (21 percent) occurred when there were more than five bystanders on-site.

4.5 Bi-Variate Analysis: Target Suitability

Body Armour

There was a slightly higher percentage of respondents wearing body armour in the “incident” cases (30 percent; n=7) than in the “non-incident” cases (56 percent; n=5) (Table 4.2). However, the presence or absence of body armour was not significantly correlated to the likelihood that the respondent would experience an on-the-job incident ($p=.650$).

Using a Hand-cart

In the majority of “incident” and “non-incident” cases, the respondents were not using a hand-cart to deliver liability (79 percent; n=15). There was an even distribution of respondents using a hand-cart to deliver liability in both the “incident” (20 percent; n=2) and “non-incident” (22 percent; n=2) cases, and only one respondent, in the “non-incident” category, indicated that they were using an empty hand-cart (5 percent).

There was no significant relationship between the likelihood of experiencing an on-the-job incident and using a hand-cart to deliver liability ($p=1.00$), using an empty hand-cart ($p=.474$), or, indeed, whether or not a hand-cart was being used at all ($p=.906$).

Concealing Parcels in a Canvas Bag

Most of the “incident” (60 percent; n=6) and “non-incident” (67 percent; n=6) cases took place when the respondent was not transporting cash parcels concealed in a canvas bag. This variable was not significantly correlated with the likelihood of experiencing an on-the-job incident ($p=.100$). When the respondents were asked to

indicate whether or not they were transporting cash parcels that were *not* concealed in a canvas bag, only one (10 percent), in the “incident” group, indicated that this had occurred. Again, this variable was not found to be statistically significant ($p=1.00$).

Quantity/Type of Liability

The number of cash parcels being carried by the respondent was not significantly associated with the likelihood that they would experience an on-the-job incident ($p=.777$). In the majority of “incident” (80 percent; $n=8$) and “non-incident” cases (67 percent; $n=6$), the respondents were not carrying cash parcels, with a relatively even distribution in the number of parcels across the remaining “incident” and “non-incident” cases. In addition, whether or not the respondent was carrying one or more boxes of coin was not significantly correlated with their likelihood of victimization ($p=1.00$)

4.6 Bi-Variate Analyses: Level of Guardianship

Presence or Absence of a Partner, Isolation from a Partner

In the majority of both “incident” (70 percent; $n=7$) and “non-incident” (56 percent; $n=5$) cases, the respondent indicated that they were working with a partner. However, the presence or absence of a partner was not significantly related to the likelihood that the respondent would experience an on-the-job incident ($p=.650$). The respondents were also asked whether or not they were the only crew member outside of the company vehicle at the time of the incident, or upon entering the site, in order to account for the possibility that their isolation led them to be victimized despite working with a partner. However, there was no significant relationship between physical isolation

and the likelihood of victimization ($p=1.00$)

Presence of police officers or on-site security

Only one “incident” (10 percent) and one “non-incident” (11 percent) case took place in a location with on-site security or police officers. As a result, this variable was not significantly related to the likelihood of experiencing an on-the-job incident ($p=1.00$).

4.7 Conclusion

The descriptive analysis reveals that the majority of the sample population indicated that they felt no difference in safety based on the position they were assigned or the time of day they were on-duty (though those who perceived a difference overwhelmingly indicated that they felt safest between 6:00 AM and 5:59 PM).

A total of 64 on-the-job incidents were reported by 15 percent ($n=19$) of the population. More than half of these respondents indicated that they had reported the incident they deemed “most significant” to a supervisor (58 percent; $n=11$). These incidents were most likely to take place on a weekend, between noon and sunrise, and involve a single, unarmed, white male offender. The guards appeared to be most vulnerable while near a company vehicle, customer’s “cash office”, or an ATM.

The results of the bi-variate analyses show that a respondent’s city and length of employment, as well as having a clear line-of-sight to their destination, are significantly correlated to the risk of victimization for the 127 armoured guards in the sample. Though the majority of the variables were not significantly correlated with the likelihood of victimization, it is likely that the small sample size and the offenders’ advantage of site

pre-selection noted by Gill (2001) may have limited opportunities to detect the relationship between these variables and the likelihood of victimization. These limitations, as well as recommendations for circumventing them in future studies, will be discussed in the following chapter. The significance of these findings to the three research questions presented earlier in this chapter, as well as support for a re-interpretation of Routine Activities Theory's approach to situational crime prevention when considering the victimization of armoured , will also discussed in the Chapter 5.

Chapter Five: Discussion

5.1 Introduction

The primary objective of this study was to determine how often, and to what extent, armoured guards are subjected to violent victimization; what factors increase or decrease their likelihood of victimization; and what steps can be taken to prevent on-the-job incidents from occurring in the future. This chapter outlines the significance of this study's results by drawing connections from existing literature to the key correlates of victimization among armoured guards, which were identified in the previous chapter. The results demonstrate mixed support for RAT as a useful theoretical framework in the context of understanding the victimization of armoured guards.

The chapter begins by discussing the frequency and type of offences that were perpetrated against the armoured truck guards who participated in the study, and interpreting the impact of these incidents on the psychological well-being of the participants, as well as the extent of their injuries. The following sections address the role, and potential theoretical implications of, the variables found to be significantly correlated with an increased likelihood of victimization. The third section outlines policy implications of the study, namely strategies to reduce the likelihood of victimization for armoured guards. The chapter concludes by outlining the limitations of the current study.

5.2 How often, and to what extent, are armoured truck guards subject to violent victimization?

The well-publicized shooting of an armoured guard during the commission of a robbery such as in Point-Aux-Trembles (CTV News, 2011), attempted robberies targeting

armoured truck crews (CBC News, 2012b; CBC News, 2013), and the murder of three guards in Alberta (CBC News, 2011) are consistent with the general perception that dangerous events involving armoured truck crews are a frequent occurrence. However, the results of the present study do not support this perception. Rather, the respondents typically reported banal acts of harassment, rather than “serious” robberies or assaults: in the sample population of 127 armoured guards, 21 respondents (17 percent) reported 58 threats, yet there were only four attempted robberies and two attempts to cause physical injury.

This is not to suggest that the incidents reported by the respondents were not legitimate instances of victimization, or to infer that they do not suffer as a result of their experiences. In fact, when describing challenges faced by police officers, Sarason et al. (1979) specifically cited “insulting and derogatory verbal attacks” as contributors to “anger and hostility”, which, aside from their direct impact on the officer’s psychological state, “frequently interfere with job performance” (pg. 594). Indeed, there is a substantial body of evidence to suggest that prolonged exposure to incidents like those experienced by many of the respondents can have a negative impact on their mental, and even physical, wellbeing.

Recall from Chapter Two that *General Adaptation Syndrome* (Filaretova, 2012; Selye, 1936; Vijayashree, 2011) refers to a psychological and physiological process by which an organism adapts to external sources of stress in three stages: the initial response, referred to as the “alarm state”, which is followed by the “resistance state”, and, eventually, the “exhaustion state” (characterized by the depletion of the organism’s physiological and psychological resources). While there is no extant literature exploring

the impact of stress on armoured truck guards, and the survey distributed to the respondents in this study did not explicitly ask respondents questions about stress, there is evidence to suggest that it may play a role in their likelihood of victimization. Numerous researchers (Brandl and Strohshine, 2003; Brandl and Strohshine, 2012; Mayhew, 2001; Ryan, 1997) have suggested that although most injuries suffered by police officers are the result of slip-and-falls, exposure to infectious diseases, car accidents, or other occupational hazards, they suffer a high likelihood of developing psychological disorders (including depression and post-traumatic stress disorder) that resemble the “exhaustion state” described by Selye (1936). This trend is caused by ten elements of police work identified by Ryan (1997), which, in summary, include: being seen as an authority figure that is symbolically separated from the rest of society, having to work irregular hours in a “generally negative”, highly-structured, quasi-military organization; the “double-edged sword” of camaraderie within the organization; having to practice emotional restraint and tolerate unpredictable and intense “burst-stress”; the need to work in a “fact-based” world where everything is judged according to written law, rather than personal values; and the difficulties associated with raising children that result from these elements. Ultimately, these stressors negatively affect not only police officers’ mental and physical wellbeing, but their intimate and familial relationships, as well (Roberts and Levenson, 2001; Ryan, 1997).

Armoured guards and police officers perform very different duties; however, many of these elements apply to both professions. Recall from Chapter Two that, like police officers, armoured guards also wear uniforms, carry guns, and (depending on the company) wear badges (which, in turn, may cause members of the public to perceive

them as authority figures); they often work at night, or have variable schedules; they are forced to rely upon, trust, and spend long hours working in close quarters with their partners, despite the potential for personal conflicts; they are subjected to “burst stress” (this will be discussed in greater detail below); they may experience a “generally negative” environment if regularly threatened or demeaned by the public, or if they become unintentional “first responders”¹²; and, due to these shared elements, may experience similar difficulties in raising their children.

There is evidence to suggest that prolonged exposure to the stress caused by the elements described by Ryan (1997) may have a detrimental effect on a police officer’s job performance. In an evaluation of stress-management techniques used by police officers, Sarason et al. (1979) noted that “stresses and strains related to the maintenance of high levels of vigilance and arousal occur continually and exert an impact on police officers” (pg. 594). Armoured guards, because they carry CRAVED items, are subject to similar “stresses and strains”: every one of them is aware that - no matter how unlikely - they may become the target of a violent robbery. Additionally, every instance of victimization, no matter how minor, reminds the guard of this fact and, until the incident has concluded, has an ambiguous outcome for the guard. In other words, although a threat from an unarmed individual may not result in noticeable psychological damage to

¹² Although armoured guards are not trained or encouraged to act as first responders, I have personally been the first person to come across automobile accidents, injuries, and criminal behaviour by virtue of working in the public sphere for long hours, over a wide geographic area, and (often) at night. Anecdotal evidence provided by my coworkers indicate that such experiences are widespread.

the guard, consistently experiencing such events (given the high-stakes outcome if the incident should develop into a robbery or assault) could, rationally, be likened to the “burst stress” experienced by police officers and conceivably lead guards into the “exhaustion state” described by Selye (1936).

Although none of the respondents reported any physical injuries, and only two (11 percent) reported experiencing emotional distress following their victimization experiences, it is worth noting that nearly half of the respondents who elaborated on their experiences (47 percent; n=9) did not answer the question asking them to indicate the impact of their most severe on-the-job incident. While there is no evidence to suggest that they chose not to answer this question because they felt that admitting they had suffered physically or emotionally from the incident would indicate personal weakness, or because they had suffered physically or emotionally but felt that the question was too invasive to warrant a response, these are possible explanations for the high non-response rate. Indeed, researchers have noted that although police officers are more likely to be assaulted by an unarmed offender than one with a weapon, and typically suffer only minor injuries (Brandl and Strohshine, 2003, pg. 174; Mayhew, 2001, pg. 2; Wilson and Zhao, 2008, pg. 462), such events can have profound, detrimental effects to their psychological well-being (Brandl and Strohshine, 2003, pg. 174; Mayhew, 2001, pg. 3). In summary, further research will be needed to determine the full impact of stress on the job performance and, by extension, risk of victimization, for armoured guards.

5.3 What factors increase the likelihood of violent victimization for armoured truck guards?

In Chapter Four, three variables were identified as being significantly correlated with an increased likelihood of victimization: respondent's city of employment, their length of employment, and whether or not they had a clear line of sight to their destination. The time of day, time of week, and the respondent's distance from their destination and the company vehicle were not significantly correlated to their likelihood of victimization, nevertheless these aspects merit further discussion.

City of Employment

Although more respondents from City A (n=12) indicated that they had experienced incidents of violent victimization than Cities B (n=9) and C (n=1) combined, there is no obvious explanation for this difference. As was noted in Section 5.2, police officers and armoured guards fulfill very different roles and duties, yet share many of the same occupational characteristics and stressors. Thus, research focusing on correlation of a police officer's city of employment and their likelihood of victimization may offer valuable insight when exploring the impact of this variable on the likelihood of victimization for armoured guards. In the United States, researchers have focused on the political marginalization of ethnic minorities (specifically, black residents) to explain police homicide in large cities (Kaminski, 2008, Kent, 2008). However, given the different ethnic composition of large US cities and Southern Ontario, it is unlikely that this explanation could be reliably extended to this study. According to the most recent data available from Statistics Canada (2008, 2013A, 2013B), Caucasian non-aboriginals

represent approximately of 81 percent of Ontario's population¹³, and while the percentage of white offenders reported by the respondents in this study (n=7, 67 percent) was smaller than the percentage of white residents in Ontario as a whole, it should be noted that white offenders were reported by the respondents more frequently than all of the other ethnic categories combined. While offender ethnicity was not found to be statistically-significant based on the information gathered through the use of the questionnaire, it is possible that the data were skewed by the relatively small sample size and that offenders belonging to visible minority or aboriginal groups are over-represented in the victimization of armoured guards in Ontario, meaning that the impact of this variable remains unknown.

Regional economic disadvantage has also been linked to increased homicide of police officers (Kaminski, 2008). While a detailed economic comparison of Cities A, B, and C cannot be provided in the interest of maintaining company and respondent anonymity, it can be stated that, according to data collected by Statistics Canada¹⁴, the total difference in the average income for the three cities is less than \$5000 per year. In other words, the three study sites were largely comparable with respect to their economic composition. Given that each branch services not only the city in which it is located, but adjacent cities and towns as well, there is insufficient evidence to support the claim that economic disparity between each city is the cause of varying levels of victimization.

¹³ Note that this percentage may be inflated by the lack of up-to-date information on the number of visible minorities living in Ontario.

¹⁴ Please note that in order to prevent the cities from being identified, a link to the source material cannot be provided.

Numerous researchers (Cozens et al., 2001; Cozens et al., 2005; Felson, 2002; Kajalo and Lindblom, 2010) have linked Routine Activities Theory with crime prevention through environmental design and, as such, it is important to consider the impact of the physical environment on the facilitation of criminal activity. When considering the impact of CPTED on the likelihood of victimization for armoured guards with relation to their city of employment, it should be noted that there may be significant variation in the number of customer locations in each city that fit the definition of “crime attractors” (Felson, 2002), such as bars (pg. 157), sporting venues (Kirk, 2006), shopping centres (Kajalo and Lindblom, 2010), and neighbourhood parks (Groff and McCord, 2012). Increased exposure to these locations, or areas in their immediate vicinity, according to Routine Activities Theory, would lead to an increased likelihood of victimization for the respondents by facilitating the convergence of motivated offenders and suitable victims, while removing or denying access to capable guardians. However, the questionnaire did not reveal any evidence of regional differences in the number of “crime attracting” sites, and a detailed analysis of the locations serviced by the guards in each city is beyond the scope of this study. Suggestions for carrying out such a study, including the adoption of a site-based dataset, can be found in Chapter 6.

In short, while the respondent’s city of employment was significantly correlated with their likelihood of victimization, the cause of this correlation remains unknown. While Routine Activities Theory has been criticized for its apparent disinterest in the causal links between criminal behaviour and wider social ills (Lilly et al., 2011, pg 331), it is worth noting that City C scored nearly 15 points higher on the Crime Severity Index than cities A and B (which were comparable) in 2010-2011 (Statistics Canada, 2012C),

and that the severity - rather than likelihood - of victimization for armoured guards may be more closely attributed to overall crime rates in their city of employment. There is some evidence from the questionnaire to support this, as the most serious incident reported by a respondent in City C involved being threatened with a firearm.

Access Control and Line of Sight

Previous research indicates that “natural surveillance” strategies, including access control and the maintenance of clear lines of sight, reduce the likelihood of criminal activity in a variety of environments, including shopping centers (Kajalo and Lindblom, 2010), residential areas (Cozens et al., 2001), and open-air markets (Poyner, 1992; cited in Cozens et al., 2005). However, in this study, clear lines-of-sight were found to be correlated with an increased risk of violent victimization for armoured truck guards. Although these findings would appear to be at odds, they are reconcilable when one considers the way in which the interaction between the offender, victim, and environment is influenced by site pre-selection.

Previous research (Gill, 2001; Wright and Decker, 1997) indicates that offenders pre-select the areas in which they will confront their victims based on favourable geographic and environmental qualities. You will recall from Chapter 2 that access control - that is, using physical and symbolic barriers to limit the movement of individuals to designated points of ingress and egress - fosters an increased sense of conspicuousness upon the *individual* entering the site - not necessarily the *offender*. Offenders who arrive on-site before their intended victims gain the advantage of knowing that their targets - who are already conspicuous by virtue of their uniforms and large

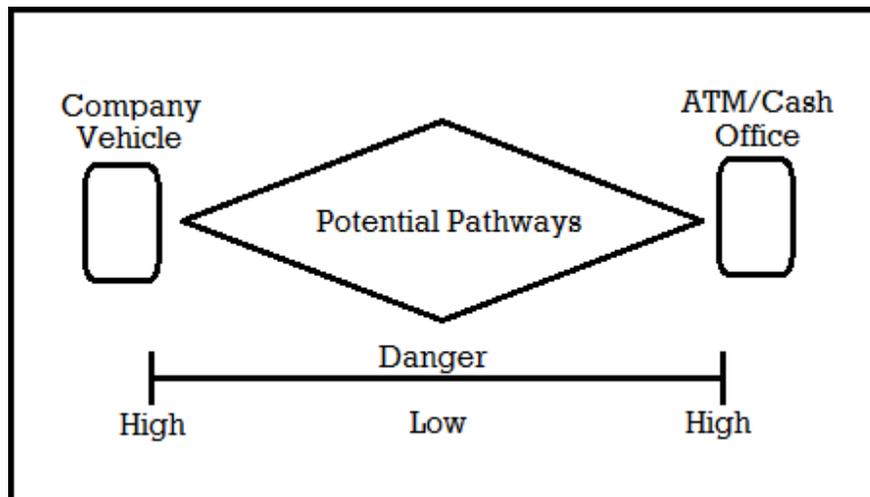
vehicles - are unable to monitor every potential threat due to the inverse-Panopticon effect described in Chapter Two. In other words, these offenders have the advantage of only having to monitor a limited number of access points, while their target is faced with the impossible task of identifying potential threats from nearly infinite directions and sources. Because access control influences the paths that individuals select when moving throughout an area using physical and symbolic characteristics (Felson, 2002; Grof and McCord, 2012), it may also allow highly-motivated offenders to predict the paths that their targets will take and “lie in wait” when coupled with clear lines-of-sight.

Not only does this imbalance present an advantage to the “professionals” (Gill, 2001) who carefully plan their robberies, it likely contributes to the cumulative stress that is partially caused by long-term exposure to the uncertainty of victimization, and may eventually lead guards to the “exhaustion” state (Selye, 1936) experienced by police officers (Brandl and Strohline, 2003; Brandl and Strohline, 2012; Mayhew, 2001; Ryan, 1997). A guard suffering from a state of decreased physical and mental acuity may be seen as a more suitable target by a motivated offender, in much the same way that a lone drunk may appear to be a more appealing target for a robbery than a sober individual (Cullen and Agnew, 2011). In accordance with Routine Activities Theory’s assumption that offenders are rational individuals who decide to engage in crime based on a cost-benefit analysis (Cullen and Agnew, 2011; Lilly et al., 2011; Tibbets and Hemmens, 2010), a guard displaying signs that they have reached the “exhaustion” state may lead the offender to believe they are less likely to be injured or apprehended when engaging in harassment, an assault, or a robbery, this increasing the likelihood that they will choose to victimize the guard.

A limited number of entrances, exits and pathways within a location may also facilitate the convergence of armoured guards and offenders acting spontaneously due to a diminished rational thought process resulting from mental illness, intoxication, or generally-poor impulse control. There is some evidence to support this claim: although only one respondent indicated that their most serious victimization incident involved a mentally-disordered offender, 27 percent (n=3) of the respondents stated that the offender was displaying overt signs of intoxication. Even in areas with little access control, it is important to remember that the armoured guard's routine will generally follow the same three-step process: exit the company vehicle, travel to the customer's ATM or cash office, and return to the company vehicle. The data show some evidence that guards are at a higher risk of victimization when they are in the immediate vicinity of either of these fixed locations: 60 percent (n=6) of the guards who specified their distance from the company vehicle at the time their most serious incident occurred indicated that they were less than 20 feet away, 30 percent (n=3) were 20 to 50 feet away, and only 10 percent (n=1) were more than 50 feet away. Of the respondents who indicated their distance from the customer's ATM or cash office at the time of their most serious victimization incident, the largest group (44 percent, n=4) indicated that they were less than 20 feet away, and the second largest (33 percent, n=3) indicated that they were more than 50 feet away. Given that company policy directs employees to park the company vehicle as close as possible to the customer's ATM or cash office, there is a distinct possibility that the respondents who were victimized while more than 50 feet from this location were within 20 feet of the company vehicle. These statistics suggest that guards are more likely to be victimized as their potential pathways become limited, owing to the necessity of traveling

to these fixed locations (see Figure 5.1).

Figure 5.1 Likelihood of Victimization and Predictability of Movement



Based on my observation of the data and an analysis of extant literature (Brandl and Strohline, 2003; Brandl and Strohline, 2012; Gill, 2001; Selye, 1936; Wright and Decker, 1997), I conjecture that the implementation of access control and the maintenance of clear lines of sight in areas serviced by armoured truck crews places them at an increased risk of victimization and long-term psychological distress. The findings of this study suggest that these environmental factors divide the attention of guards entering or exiting the site, are advantageous to the “professional” offenders (described by Gill, 2001) when engaging in site pre-selection, and may facilitate the convergence of armoured guards and spontaneous offenders in time and space. It is also possible that they contribute to the cumulative stress that can draw guards into an “exhaustion state”.

Length of Employment

Respondents who had been employed between two and 10 years reported the highest number of on-the-job incidents (n= 55; 86 percent), while those who had been employed for less than two years, or more than 10 years, reported far fewer incidents (n=4; 6 percent, and n=5; 8 percent, respectively). This finding was consistent with studies examining assaults against police officers (Kaminksi and Sorenson 1995, cited in Brandl and Stroshine, 2003; Mayhew 2001) who found that inexperienced police officers suffered more assaults while on-duty than their more experienced coworkers. One explanation for this trend is that new officers are more likely to be assigned high-risk duties, thus increasing their likelihood of interacting with offenders on a day-to-day basis (Mayhew, 2001). When considering the company's policies regarding scheduling, rates of pay, and seniority, it is highly likely that this explanation also plays a role in shaping the victimization experiences of armoured guards.

Employees' rates of pay are determined by the positions they have been assigned to fill. Drivers receive a lower rate of pay than guards who are responsible for exiting the company vehicle and performing the necessary duties at each stop. Employees are generally eligible for positions based on seniority - in other words, the longer an employee has worked for the company, the more eligible they are for positions with the highest rate of pay. New employees have fewer options, and as a result, are more likely to work as drivers. I have also found, based on my personal experience as a front-line employee at two of the company's branches, that employees generally seek the highest-paying positions on the routes with the fewest customers. As a result, the highest-paying positions on the routes with the fewest customers tend to be dominated by the employees

who have the most seniority.

With this in mind, one possible explanation for the lower rate of victimization among employees who have been working for less than two years and employees who have been working for more than ten years is that they present fewer opportunities for victimization to offenders. Other researchers have discovered that offenders targeting armoured truck crews were far less likely to attempt an assault on the truck, itself, than to engage personnel who were on foot (Cole, 2009; Gill, 2001). Logically, drivers - who are likely to be new employees - are less likely to be victimized, as they only permitted to exit the company vehicle for short periods of time (for example, to use the washroom) in areas that have already been secured by their coworkers. Likewise, employees on routes that service fewer customers - that is, employees with the greatest seniority - will spend less time outside of the truck, and present fewer opportunities for victimization to offenders. Employees who are eligible to work as messengers or technicians (that is, outside of the truck), but lack the seniority to be eligible for routes with fewer customers, will have the greatest amount of exposure to areas used by the public (and, by extension, offenders), thus increasing their “availability” as described by the CRAVED model (Clarke, 1999), as well as the “availability” of any liability they are carrying, thereby increasing their likelihood of victimization. This explanation appears to be wholly consistent with Mayhew’s (2001) discovery that police officers with less than seven years of experience suffer the highest number of assaults because they are more likely to be assigned high-risk duties, as armoured guards only enter this “high-risk” phase after spending the beginning of their career in the relatively safe role of a driver (but before gaining the seniority required to secure a position with less exposure to potential

offenders).

Another possible explanation for the decrease in the likelihood of victimization after being employed for more than ten years is the possibility that, as employees gain on-the-job experience and training throughout their career, they are able to develop effective strategies to avoid victimization. One study (Mayhew, 2001) has noted that this explanation may account for the decrease in the number of assaults experienced by police officers with more than seven years of experience. While this explanation does not account for the lower rate of victimization among respondents who have been employed by the company for less than two years, it has already been stated that that these employees are less “available”, according to the CRAVED model (Clarke, 1999), as they are more likely to be assigned lower-paid positions (including driving) due to their lack of workplace seniority.

The final explanation for the link between career length and victimization is that, although respondents who had been employed for more than 10 years were actually at comparable risk of victimization to the “high-risk” groups, they were less likely to recognize or report non-serious incidents of victimization. The claim that armoured guards share many of the occupational traits that place police officers at risk of reaching an “exhaustion state” was discussed earlier in this chapter, and the impact of this stress-induced phenomenon may be demonstrated in the decrease in reporting of on-the-job incidents for employees who have been employed for more than ten years. Frequent harassment and the accompanying “burst stress”, coupled with the constant low-level anxiety of having to remain vigilant against a violent attack that may never occur may, over time, cause many armoured guards to shift from an initial “alarm state” when

subjected to harassment, to a long-term “resistance state”, and, finally, an “exhaustion state” (Selye, 1936).

Each of the above explanations - exposure, adaptation, and exhaustion - offers a plausible, but incomplete, reason for the observed correlation between length of employment and likelihood of victimization. There was no evidence to support the notion that respondents who have been employed for more than 10 years are more likely to become bored and complacent (especially if they have not experienced an on-the-job incident in the past), and therefore less likely to recognize potential threats, though this is, logically, a possibility. The decline in the number of respondents who have experienced an on-the-job incident after being employed for more than 10 years may also indicate that employees who have been victimized are more likely to opt-out of employment with the company, but it is not possible to evaluate this explanation using currently-available data.

Time of Day

Although the time of day was not found to be significantly correlated with the likelihood of victimization, it is possible that the full impact of this variable could not be properly measured due to methodological limitations.

The scheduling practices of the company typically result in daytime and night-time shifts of eight to ten hours in length, with daytime shifts generally completed by 5:30 PM and night-time shifts completed between 12:00 AM and 2:00 AM. In the hours following the completion of the daytime and night-time shifts, only a small number of crews (typically one from each city) are active. These “line-haul” crews travel directly to another branch to facilitate internal transfers of cash, paperwork, or other valuables, and

are often on the road for less than four hours. As a result, they face minimal exposure, as they are traveling directly from one secured location to another, offering a relatively short window of opportunity for offenders.

You will recall from previous chapters that, when testing the time of day for statistical significance, the 24-hour cycle was divided into four windows of time - midnight to sunrise, sunrise to noon, noon to sunset, and between sunset and midnight. The majority of the incidents (55 percent; n=6) occurred between noon and sunset. This was consistent with my expectations, as the largest number of crews would be working during this window of time due to the overlap of the end of the daytime shifts, and the beginning of the night-time shifts. Likewise, I expected there to be relatively few incidents between midnight and sunrise, as for the majority of this period of time the only crews in operation are the aforementioned "line-hauls" (9 percent, n=1). The lack of parity between the number of incidents that occurred during the sunrise to noon (none) and the noon to sunset (36 percent, n=4) windows, however, was somewhat surprising given that approximately the same number of crews would be in operation during these periods of time. Whether this imbalance is the result of differences in reporting by respondents who work during these hours, a difference in the level of risk that was obscured by the small sample size, or simply a coincidence, will have to be determined by future researchers. It should be noted, however, that there is evidence supporting a correlation between time of day and criminal activity from an RAT perspective (Cohen and Felson, 1979; Cozens et al., 2001; Felson, 2002), and for an increased likelihood of assault against police officers (Mayhew, 2001).

Time of Week

The effect of how the time of week shapes the likelihood of victimization, like the time of day, may have been under-stated due to methodological limitations, and must be understood within the context of the scheduling practices of the company.

With rare exceptions (for example, rendering services for a one-time customer), night-time shifts at the company operate on a Sunday to Thursday schedule, while daytime shifts run on a Monday to Friday schedule. This means that there are, generally, only one or two crews operating during the daytime on Saturday or Sunday. Despite the limited opportunities that this scheduling practice imposes upon offenders targeting armoured guards on the weekend, the majority of the incidents reported by the respondents (64 percent; n=7) occurred between 5:00 PM on Friday and 11:59 PM on Sunday. Whether this high concentration of incidents in such a small window of time and opportunity was found to be statistically insignificant because of the small sample size, or because this study did not take into account the reduced operating hours of the company during the weekend, will need to be determined by future studies. However, it is worth noting that there is some support for the possibility that armoured guards are at an increased risk of victimization during the weekend in the form of research indicating that assaults against police officers are more likely to occur during this period (Mayhew, 2001, pg. 2).

5.4 What steps can be taken to reduce the likelihood of victimization for armoured truck guards?

The recommendations outlined in this section are informed by the application of

Routine Activities Theory to extant literature and the findings discussed in Chapter 4, as well as my personal experiences as an armoured truck guard. Though far from exhaustive, there is evidence to suggest that implementing these recommendations will result in a reduction in the likelihood of violent victimization of the armoured guards employed by the company.¹⁵

Increasing Awareness of Front-Line Personnel

Even the most effective policies and procedures will be ineffective if the front-line personnel neglect to apply them. The data collected during this study should be integrated into the company's training program to ensure that front-line personnel are able to exercise extra caution where appropriate, and to provide them with contextual information demonstrating the "real world" application of the principles taught in the program. This can be achieved by introducing material that provides a basic understanding of the underlying principles of Routine Activities Theory - specifically, the importance of reducing one's "target suitability" in order to decrease the likelihood of victimization - and highlighting the importance of exercising caution in areas making use of access control, areas where guards have fewer pathways to choose from (including the immediate vicinity of the company vehicle and the customer's ATM/cash room), and

¹⁵ In the interest of protecting the company's employees from violent victimization, I am unable to include recommendations for changes to specific policies or operating procedures. Discussing such matters in a publicly-available thesis such as this could allow offenders to exploit any perceived weaknesses or flaws and lead to the victimization of the company's personnel.

areas with clear lines-of-sight.

Teaching employees to identify, prevent, and manage their shift into the “exhaustion state” described by Selye (1936) may also be helpful in reducing their likelihood of victimization while on duty, as it will make them less suitable as potential targets by preventing the degradation of their mental and physical resources. A Cognitive Behavioural Therapy (CBT) approach to stress management has been linked to improved job performance among police officers (Dunn and Cahill-Canning, 2005; Sarason et al., 1979). The techniques in this approach include “self-monitoring of reactions to stressful situations, muscular relaxation, and the development of adaptive self-statements” (Sarason et al., 1979, pg. 593), and should be integrated into the company’s training program as a method of alleviating the day-to-day stress endured by its employees.

Increasing Reporting

Unfortunately, it is only possible to create effective policy when the policy-makers have access to accurate, up-to-date information. While the majority of the respondents (58 percent; n=11) who had been victimized while on duty reported the incident to a supervisor, there is substantial room for improvement.

Fostering a culture of reporting among employees would not only allow supervisors to monitor changes in the frequency or severity of incidents on a location-by-location basis, it would also allow police to identify suspects, based on previously-reported incidents, should a serious assault or robbery take place. However, the responses to the questionnaire suggest that there may be significant barriers to doing so. Previous researchers (Goudriaan et al., 2004) have asserted that the likelihood that a victim will

report a criminal incident to the police increases in proportion to the degree to which they are physically or financially harmed by the crime. Indeed, three respondents (75 percent), none of whom had been physically injured or the victim of a successful robbery, indicated that they did not report their victimization experiences to management stated that they felt the incidents were not serious enough to be reported.

There is also anecdotal evidence to suggest that the low rate of reporting may indicate a general lack of knowledge regarding what legally constitutes a threat, instance of harassment, or assault: during the data-collection process in City B, one of the training personnel candidly remarked, “I can guarantee you that every single one of these people has been threatened at some point... they just didn’t realize it.” As the legal definitions of the most common crimes guards are likely to face (eg. robbery, assault, and harassment) are covered in the basic training program for new employees, regular reinforcement of these definitions during training events (eg. bi-annual firearms requalifications) or meetings (eg. security-oriented portions of union-organized “speakouts”) would help to ensure that front-line employees recognize these events when they occur.

Finally, there was evidence that employees have been discouraged from reporting incidents of minor victimization by their supervisors. One of the respondents who reported their most serious victimization experience stated that his supervisor “did not take [the incident] seriously”, while one of the employees who had not reported their most serious victimization experience indicated that he had experienced “ridicule, doubt, and contempt” from his supervisors when doing so in the past. It is unclear if these are legitimate complaints, or if this is a common attitude among the supervisors in the company, as nine (47 percent) of the respondents who had experienced an on-the-job

incident did not answer the question asking if they had reported the incident to a supervisor.

Whether these slights are perceived or real, there is evidence that they have negatively impacted the reporting of on-the-job incidents by employees. Research by Albrecht (2010) shows that employees perform best when three elements are satisfied: psychological meaningfulness (the impression that one's work is valuable and worthwhile), psychological safety (the security of being able to express oneself without negative consequences to self-image, career, or status), and psychological availability (possessing the physical, emotional, and psychological resources necessary to perform the task). Employees who have been ignored or ridiculed for reporting on-the-job incidents have undoubtedly suffered blows to their psychological safety, likely pushing them towards an "exhaustion state" and reduced psychological availability. Going forward, supervisors must take steps to ensure that front-line employees know that it is not only acceptable, but encouraged to report any and all victimization experiences. They must also be reassured, in order to safeguard the psychological meaningfulness of reporting on-the-job incidents, that doing so will actually help improve on-the-job safety. This could be achieved by creating a simple, standardized "incident report" form to be included in the employee's daily paperwork and encouraging its use¹⁶. The employees should be made aware that these forms will be audited on a regular basis, allowing company officials to identify trends in the victimization of front-line employees, identify victimization "hot spots", and provide a reference point when looking for suspects should a serious incident occur.

¹⁶ A template for this form has been included in Appendix D.

Subverting and Utilizing CPTED and RAT

As has already been discussed in this chapter, the bivariate analysis of the questionnaire results revealed that there is evidence to suggest that the application of natural surveillance strategies in locations serviced by armoured truck personnel increases their risk of victimization. It would be logical, therefore, to modify the procedures followed by armoured truck personnel to respond to these principles in a way that decreases the advantages they offer to offenders. Based on the assumption that offenders are rationally-motivated individuals (Cullen and Agnew, 2011; Lilly et al., 2011; Tibbets and Hemmens, 2010), these modifications, to be effective, must convince offenders that the costs of victimizing the guard outweigh the potential benefits. This can be achieved by taking steps to ensure that guards do not fit the CRAVED model, thus decreasing their (and the liability's) target suitability.

Interpreting the data collected from the questionnaire using a Routine Activities perspective suggests that armoured guards will benefit from procedural changes that seek to foster territoriality while servicing ATMs which, given their purpose, are often serviced in areas accessible by the general public. Of the respondents who indicated that they had experienced an on-the-job incident, 40 percent (n=4) indicated that they did not realize that the offender intended to cause them harm until they were less than 10 feet away. Other researchers (Felson, 2002; citing Crowe and Zahm, 1994) have highlighted the importance of "marking transitions" - that is, creating territorial boundaries that make it immediately obvious to inhabitants when an interloper has crossed into the space, and vice-versa. Providing guards with small, brightly-coloured pylons would offer them a

lightweight, portable, and easy-to-use tool for creating a perimeter that would serve to redirect pedestrian traffic and draw attention to anyone entering the space immediately surrounding the guards. This would not only deter potential offenders by increasing their conspicuousness, thus eliminating their ability to “conceal” the deviant act (Felson, 2002, pg. 32), but provide them with a passive mechanical strategy that increases their guardianship in much the same way as a security system (Tibbets and Hemmens, 2011, pg. 104).

As was noted above, endeavouring to make the CRAVED paradigm less applicable to the valuables carried by guards may deter offenders from seeking them out. Unfortunately, the valuables carried by the guards are inherently *valuable* and *enjoyable*, and many of the techniques for making them less *removable* and *available* (that is, using armoured vehicles, employing armed guards, and adhering to basic security protocols) are already in use by the company (indeed, this is the very focus of the industry). Smith and Louis (2010) briefly discuss the use of “dye bombs”, or equivalent products, as an effective means of marking stolen cash and rendering it unusable, thereby making it less *concealable* and, if it is rendered unfit for use, less *disposable* through spending (and, therefore, less *enjoyable*). However, this strategy would only be effective if potential offenders aware of the possibility that dye-packs are in use before they decide to engage in a robbery attempt, in order to convince them that the primary benefit (that is, the stolen liability) no longer exists and thus cannot outweigh the potential costs of engaging in the criminal act. If the offenders only discover that the liability has been made useless to them after the fact, it will have no deterrent effect. Cash-in-transit bags outfitted with remote-activated sound alarms may be useful in drawing attention to an offender

attempting to flee the scene of a successful robbery, making the valuables less *concealable* while they are in public areas. However, as Smith and Louis (2010) point out, these mechanical strategies are cost-prohibitive.

Finally, armoured truck crews may benefit from decreasing their visibility. This could be accomplished by avoiding the use of main entrances to customer's locations in favour of side doors or "shipping doors", typically located in the back of the building and used by more traditional delivery companies, making it more difficult for an offender to verify when the guards have arrived. Likewise, reducing the number of bystanders by relocating the guards to areas less likely to be used by the public may increase the offender's sense of conspicuousness, as they will draw more attention from the guards. However, numerous researchers (Cohen and Felson, 1979; Cozens et al., 2001; Felson, 2002; Kajalo and Lindblom, 2010) have discovered that informal guardians, such as pedestrians, bystanders, store owners, and other users of shared public or semi-public space are effective deterrents to criminal activity. Given that only nine percent (n=6) of the incidents reported by the respondents fit the definition of an assault or (attempted) robbery, it would appear that the company's current procedures - including using main entrances and exits at customer locations - are generally effective at preventing serious incidents of victimization. Conversely, the "professional" robbers described by Gill (2001) preferred to victimize armoured guards in isolated areas. As such, deviation from the company's policy of operating in publicly-accessible areas may lead to an increase in serious incidents, and further research will be required to assess the feasibility of this solution.

Reinforcing the Importance of “Triangulation”

One of the items that is discussed in the company’s training program is the principle of “triangulation” - the idea that guards should maintain a distance of 10 to 15 feet from each other so that an attacker with a firearm will only be able to engage one guard at a time. When considering Routine Activities Theory, the principle of triangulation may also be beneficial in fostering a sense of unverifiable conspicuousness in the offender, as it would inhibit their ability to continually observe both of the guards as they drew closer to their intended target. It is worth noting that, although this variable was not significantly correlated with the likelihood of victimization, 71 percent (n=5) of the incidents discussed by the respondents occurred when they were less than 10 feet from their partner. This may indicate that respondents, in general, have not been acting in accordance with the principle of triangulation - therefore, an increased emphasis on the importance of this principle may help to deter offenders, and reduce the likelihood of injury should an incident occur.

Pairing Employees of Varying Experience

A bi-variate analysis revealed that the respondent’s length of employment was significantly correlated with their likelihood of experiencing an on-the-job incident. As noted above, it is possible that the decreased risk of victimization enjoyed by respondents who had been employed for more than 10 years may be attributable to reduced exposure, or may even be a false correlation caused by under-reporting. However, there is also the possibility that respondents who had been employed for longer periods of time are more likely to have the experience needed to develop strategies to identify and avoid on-the-

job incidents. As a result, it may be beneficial to pair employees with more than ten years of experience with newer employees whenever possible, so that they may learn some of these strategies through observation of their more experienced colleagues.

Before this strategy can be implemented, however, additional research to uncover the cause of the reduction in reported incidents by respondents who have been employed for more than ten years will be required. If this phenomenon can be attributed to the “exhaustion state” phenomenon, new employees are unlikely to benefit from these partnerships. If employees who have worked for the company for more than ten years actually are at a decreased risk of victimization - a trend that appears to be supported by research (Kaminksi and Sorenson 1995, cited in Brandl and Stroshine, 2003; Mayhew 2001) regarding assaults against police officers - this strategy may increase the risk of victimization for guards who already work with a partner who has been employed for more than ten years due to a decrease in guardianship and simultaneous increase in their proximity to a suitable target.

Counter-Surveillance Vehicles

Gill (2001, pg. 284) found that offenders preparing to engage in a cash-in-transit robbery often followed armoured trucks as they left the branch, in order to learn their routes and identify potential ambush sites. While no such incidents were reported by the respondents in this study, there have been reports of planned, violent attacks (either successfully carried out or thwarted during the planning stages) targeting Canadian armoured truck guards in recent years (CBC News, 2011; CTV News, 2011, National Post, 2011; National Post, 2013). Counter-surveillance vehicles, in the form of low-

profile, unarmoured vans or cars, would provide an increase in the level of guardianship afforded to the guards and may be useful as a means of identifying “professional” offenders before they have the opportunity to victimize their targets. Such vehicles could be used to follow randomly-selected trucks to several customer locations at the beginning of each shift, with the goal of identifying vehicles that appear to be following the trucks, or vehicles that appear at multiple customer locations on different routes.

This strategy, though labour-intensive and likely cost-prohibitive, would likely be extremely useful for preventing robberies by what Gill identified as “professional” offenders.

5.5 Limitations in Methodology and Data Collection

This study will contribute significantly to the understanding of how armoured guards are victimized while on-duty, and, hopefully, encourage the adoption of policies that will improve their on-the-job experience. However, it should be noted that because this research was highly exploratory in nature and required collaboration with an outside party, the methodological approach and data-collection process were subject to significant limitations. These limitations, as well as their impact on the results of this study, are outlined in greater detail below.

Limitations on Participation

In accordance with the standards for ethical research (Government of Canada Panel on Research Ethics, 2005), all of the participants in this study were self-selected and had the opportunity to refuse to participate. It is possible that employees who had

experienced a serious victimization incident chose not to participate because they felt ashamed or emotionally traumatized by the event, or simply did not wish to discuss it. It is also possible that employees who have never experienced an on-the-job incident chose not to participate because they felt that they would not be able to contribute any useful information.

Limitations to the data-collection process arose in the form of the questionnaire guidelines negotiated with the company at the beginning of the project. These guidelines would have played an important role in protecting respondent anonymity and the professional image of the company had one of the questionnaires been “leaked” to the public, and helped to ensure that day-to-day operations were not adversely affected. However, they also made the questionnaire appear somewhat lengthier and may have discouraged some employees from participating. Although the number of employees who were offered an opportunity to participate and declined to do so was not recorded, I estimate that between three and five employees in City A, 15 and 20 employees in City B, and three to five employees in City C stated that they could not participate due to an imminent shift or obligations relating to childcare. While it is possible that these were actually polite excuses, the sheer bulk of the questionnaire (11 pages, including the letter of information and consent documents) may have discouraged them from participating.

Methodological Limitations

This study made use of bi-variate analyses in an attempt to identify which geographic and environmental variables were correlated with an increased risk of victimization. However, research indicating that offenders often pre-select robbery sites

based on favourable environmental and geographic characteristics (Gill, 2001; Wright and Decker, 1997) may indicate that this analytical approach cannot effectively identify correlations between the variables in this study and the likelihood of victimization. It is possible that the offenders in this study chose the sites in which they victimized the respondents precisely because their favourable geographic and environmental characteristics were particularly stable. Furthermore, these offences constituted only a small number (n=6, 9 percent) of the incidents that were reported by the respondents, who were more likely to be victims of banal acts of harassment. While there was evidence that such incidents have long-term psychological effects on armoured guards (discussed in section 5.2), it was difficult to establish which environmental variables increased the likelihood that such incidents would occur, as the majority of the respondents did not provide additional details about these “minor” incidents.

Due to the limited geographic scope of this study, its generalizability to areas outside of Southern Ontario may be limited. Although this study was conducted in three cities, they were all located in a relatively small geographic area. Furthermore, the city with the largest sample population (City D) was unable to participate, and data collection for City C was limited to a four-hour window. It is also possible that, given that this study was conducted with only one of several armoured truck companies operating in the region, it may be difficult for researchers without specialized access to reproduce the results.

Finally, there was anecdotal evidence that the respondents were under-reporting the number of on-the-job incidents that did not result in physical assault or robbery attempts. During the data-collection process in City B, many of the respondents

expressed a concern that, because they could not recall having experienced an on-the-job incident, they were unable to answer many of the questions in the questionnaire. It is worth noting that this was the same group of respondents that the training personnel felt were under-reporting the number of incidents they had experienced.

Theoretical Limitations and Alternate Perspectives

One of the principle assumptions of Routine Activities Theory is that of the rational offender (Cullen and Agnew, 2011; Lilly et al., 2011; Tibbets and Hemmens, 2010). However, the majority of the incidents reported by the respondents in this study did not appear to be rationally motivated, in that they did not yield any form of material gain - they were simple acts of harassment. Furthermore, more than half of the respondents who had experienced an on-the-job incident indicated that they believed the offender was intoxicated or exhibiting signs of a mental disorder at the time, suggesting a diminished capacity for rational behaviour. These findings appear to undermine support for Routine Activities Theory as an appropriate perspective for understanding the victimization of armoured guards with regards to offences that cannot be clearly linked with material gain (such as robbery).

Theoretical perspectives which claim that a lack of self-control can lead to criminal behaviour offer a suitable explanation for why armoured guards may be targeted for harassment. One such theory states that offenders with high levels of impulsivity, combined with general life dissatisfaction and an anti-authoritarian worldview, are more likely to be involved in criminal behaviour (Walters, 1990). As has already been explained in previous chapters, armoured guards, like police officers, are equipped with

various symbols of authority (including firearms, uniforms, and badges), but lack extraordinary powers of arrest, and are not considered to be peace officers under Canadian law. As a result, it is possible that offenders like those described above gain emotional satisfaction from harassing armoured guards.

Another possible explanation is that individuals with low self-control - whether as a manifestation of certain personality traits, the result of intoxication, or both - choose to harass armoured guards simply for the “thrill”. This explanation is supported by previous research, which suggests that offenders sometimes engage in crime simply because it can be fun to do so (Riemer, 1981). Ultimately, there is little that a private entity can do to predict or combat these issues before they have an impact on its employees. As such, policy initiatives to reduce the impact of harassment (such as the implementation of CBT-based stress-reduction techniques, outlined earlier in this chapter) may be the only response available.

5.6 Conclusion

Based on my examination of the extant literature, the results of the questionnaire described in Chapter 3, and my personal experience as an armoured truck guard, I have found mixed support for RAT as a useful theoretical framework in the context of understanding the victimization of armoured guards. While some elements of CPTED (line-of-sight and access control) were found to be significantly correlated with respondent victimization, they appeared to increase - rather than decrease - the likelihood of victimization.

Two demographic characteristics were found to be significantly correlated with

the likelihood of victimization. Although the respondent's city of employment was one of these variables, explanations for police homicide at the regional level (including offender ethnicity or economic disparity) do not appear to account for this study's findings. It is possible that this variable is influenced by factors outside the scope of this study, such as the number of "crime attractor" areas in each city. The second of these variables - length of employment - is likely influenced by a variety of factors, including organizational policies and the development of anti-victimization strategies through on-the-job experience.

Most of the incidents reported by the respondents appeared to be banal acts of harassment, though there is evidence to suggest that long-term exposure to harassment of this type can have consequences for armoured guards. Armoured guards share many of the occupational stressors as police officers, as well as some that are unique to the profession (such as carrying CRAVED items). There is evidence to suggest that these stressors, if not addressed, can negatively impact the mental and physical health, job performance, and reporting of incidents of victimization by armoured guards.

Finally, various methods of reducing the likelihood of on-the-job victimization for armoured guards were discussed, as well as the participatory and methodological limitations of the study. In my final chapter, I will provide a final summary of the study and offer suggestions for the direction of future research.

Chapter 6: Conclusion and Direction for Future Research

The data collected in this study suggests that while armoured guards are at risk of violent victimization, most incidents are banal acts of harassment. There was mixed support for RAT as an explanation for how these events occur.

Two variables - city of employment and length of employment - were found to be significantly correlated with the likelihood of victimization among the respondents.

Although it remains unclear why the first of these variables was significant, the second may be the product of organizational policies, which lead to a decrease in exposure over time, or respondents developing pro-active strategies to avoid victimization as a result of gaining on-the-job experience. The decrease in on-the-job incidents reported by respondents who had been employed for more than ten years may also indicate that they are suffering from an “exhaustion state” (Selye, 1936) and either do not recognize, or do not bother to report, incidents of victimization. This explanation found some support in literature relating to on-the-job stress experienced by police officers (Brandl and Strohline, 2003; Brandl and Strohline, 2012; Roberts and Levenson, 2001; Ryan, 1997; Vila, 1996), with whom armoured guards share many occupational characteristics (Ryan, 1997). For this reason, it is recommended that armoured truck companies include Cognitive Behavioural Therapy-based stress-recognition and stress-reduction techniques in their training programs, which have been shown to reduce the impact of “burnout” among police officers (Dunn and Cahill-Canning, 2005; Sarason et al., 1979).

Several other variables - time of day, time of week, and the respondent’s distance from their destination and the company vehicle - were not found to be significantly correlated to, but may still impact, the likelihood of victimization. Due to the lack of

extant literature regarding the victimization of armoured guards, future studies will be needed to assess the role of these variables, and to develop strategies to equip guards with the training, equipment, and knowledge that they, and their employers, need to reduce their likelihood of victimization. Although literature relating to the occupational safety of police officers can provide some insight to the victimization of armoured guards, these studies have focused on the role of departmental policies (Fridell et al., 2009), economic disadvantage (Kaminski, 2008; Kent, 2010; Fridell et al., 2009), and the psychological characteristics of police officers (Sztajnkrycer et al., 2010) rather than environmental characteristics. As such, they do not lend themselves to an effective assessment of the impact that the growing use of CPTED has had on armoured guards. Future research should be directed towards this topic: recall from Chapter Five that many of the incidents reported by the respondents took place in areas with access control and clear lines-of-sight - both of which are components of CPTED (Felson, 2002), and may have facilitated (rather than prevented) the incidents.

As has been noted, this study was limited to a relatively small geographic area and, as such, future studies should be conducted at a provincial or national level if at all possible. A follow-up study that extends participation to a greater number of branches will not only increase the number of respondents, but improve the generalizability of the data. A larger sample population would also make it possible to engage in multivariate analyses, thus helping to identify the ways in which the likelihood of victimization is influenced by the intersection of multiple variables. Such studies would also positively contribute to the small body of literature surrounding the victimization of armoured guards, which have been based on interviews with offenders (Gill, 2001) or data gathered

from police reports (Smith and Louis, 2010), by including the experiences of front-line employees. Participation and generalizability would also benefit greatly from expanding future studies to other armoured truck companies, though the competitive nature of the industry may make voluntary collaboration impossible.

Finally, moving from an incident-based dataset to a site-based dataset, allowing for the comparison of the geographic and environmental characteristics of sites where incidents have occurred, to those of sites where incidents have not occurred, may result in a more accurate understanding of the correlation between these characteristics and the likelihood of victimization. As other researchers (Gill, 2001; Smith and Louis, 2010) have noted, armoured truck robberies often occur at sites pre-selected by the offenders for their favourable geographic and environmental qualities. As a result, an incident-based dataset like the one used in this study may be unable to identify all of the features that make a site appealing to offenders if the sites are relatively static. A comparison between sites in which an incident has never occurred, to sites where incidents frequently occur, would likely result in more definite and reliable conclusions. Such a study, however, would require access to confidential company records, and may not be feasible to researchers without specialized access.

While most types of crime have been decreasing in recent years (Statistics Canada, 2013C), one must remember that probability is irrelevant when cost is infinite. For armoured guards, experiencing a single violent incident may result in a serious degradation in their quality of life (or worse). There is also some evidence to suggest that stress resulting from the banal acts of harassment reported by the guards in this study can lead to a physical and mental “burnout”, thus increasing their likelihood of serious

victimization. For this reason, it is important that the academic community continue to explore this subject, in order to provide armoured truck companies with the knowledge they require to craft effect policies and procedures that safeguard their employees.

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Appendix A: Letter of Information

Dear Participant,

I have been employed in the **(company name)** ATM division since April of 2008, and am currently pursuing a postgraduate degree in the Criminology and Criminal Justice Policy program at the University of Guelph. I am inviting you to participate in a research study titled *Preventing Cash-In-Transit Robberies - An Analysis of the Victimization of Armoured Guards*.

In collaboration with **(company name)**, I am conducting a study to learn more about the safety of armoured truck employees while on-duty. The goal of this project is to provide recommendations and develop strategies to improve the safety and security of employees working in this important field. The first step in this process involves a brief survey that measures the level and types of risk that armoured truck employees face day-to-day with respect to assault and robbery. The survey should take approximately 10 to 30 minutes to complete and will only require you to participate one time. There will be no follow-up studies, but you are invited to contact the researcher by email if you would like to request the results of the study once the project has ended.

The enclosed survey will assess the prevalence of violent crimes perpetrated against armoured truck crews. Responses will be completely anonymous - neither I, **(company name)** management, nor your co-workers will be able to link you with your survey results. Moreover, all findings from this study will be presented in such a way that prevents individuals from being identified. Your decision to participate in this study is entirely voluntary, and it will not affect your employment status at **(company name)** in any way.

There are no direct benefits to participating in this study, but rather an important potential social benefit of contributing to a better understanding of the types of situations that result in victimization for armoured truck employees. Please note that because the survey contains questions about violent offences committed against armoured truck crews, -it is possible that you will experience some emotional anxiety in response to some of the questions. If at any time you feel discomfort while completing the survey, you have the right to terminate your participation. If, after completing the survey, you feel that you would benefit from emotional support, you may contact the Canadian Crime Victim Foundation at (905)898-7472.

If you have any questions about the survey or goals of the study, feel free to contact me at swetstei@uoguelph.ca. All questions will be kept strictly confidential.

Thank you for your time,

Simon Wetstein
MA Candidate, Criminology and Criminal Justice Policy Program
University of Guelph
50 Stone Road West
swetstei@uoguelph.ca

Appendix B: Consent Document

CONSENT TO PARTICIPATE IN RESEARCH

Preventing Cash-in-Transit Robberies - An Analysis of the Victimization of Armoured Guards

You are asked to participate in a research study conducted by M.A. candidate Simon Wetstein and Professors Carolyn Yule and Ron Stansfield, **from the** department of Sociology and Anthropology **at the University of Guelph**. The results of this research study will contribute to the completion of Simon Wetstein's Master's thesis.

If you have any questions or concerns about the research, please feel free to contact Simon Wetstein at (519) 670-1204 or swetstei@uoguelph.ca, or Carolyn Yule at (519) 824-4120 ext. 53546 or cyule@uoguelph.ca

PURPOSE OF THE STUDY

The purpose of this study is to identify factors that increase the likelihood that armoured guards will be assaulted or robbed during their shift, and develop strategies to reduce the risk they face in their day-to-day work.

PROCEDURES

If you volunteer to participate in this study, we would ask you to do the following things:

- Complete the attached pen-and-paper survey, and return it (with this form) to the locked box at your branch within ten days. This will take between 10 and 30 minutes.

Should you wish to know the outcome of the study, feel free to contact the researcher at (519) 670-1204 or swetstei@uoguelph.ca

POTENTIAL RISKS AND DISCOMFORTS

As the attached survey asks you to describe times that you were threatened, assaulted, or robbed, you may feel anxious, disturbed, or upset while describing these experiences. If, after completing the survey, you feel that you would benefit from emotional support, you may contact the Canadian Crime Victim Foundation at (905)898-7472 .

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

There are no direct benefits to participating in this study. However, by contributing to an understanding of the types of situations that increase the likelihood that armoured guards will be victims of assault or robbery, you will be helping to realize an important potential social benefit of reducing the risks they face.

PAYMENT FOR PARTICIPATION

You will not receive payment for participating in this research.

CONFIDENTIALITY

Every effort will be made to ensure confidentiality of any identifying information that is obtained in connection with this study.

Neither myself, (**company name**), or other participants will be able to link you to your survey. If any of your written responses are quoted in the study, you will only be identified as a randomly-

selected letter of the alphabet (or not at all). Your survey will be stored in a locked case off **(company name)** property, and will only be accessible by the researcher. Once the study has been completed, your survey will be destroyed.

A copy of the completed study will be provided to **(company name)**, so that the company will have the opportunity to use any useful information to modify or improve company policy, procedures, or the training program.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you choose not to participate in this study, you will not face consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise that warrant doing so.

RIGHTS OF RESEARCH PARTICIPANTS

You may withdraw your consent at any time and discontinue participation without penalty. You are not waiving any legal claims, rights or remedies because of your participation in this research study. This study has been reviewed and received ethics clearance through the University of Guelph Research Ethics Board. If you have questions regarding your rights as a research participant, contact:

**Research Ethics Coordinator
University of Guelph
437 University Centre
Guelph, ON N1G 2W1**

**Telephone: (519) 824-4120, ext. 56606
E-mail: sauld@uoguelph.ca
Fax: (519) 821-5236**

Appendix C: Questionnaire

Section 1: Background Information

The questions in this section ask about your background.

1. What year were you born?

2. Please indicate your sex.

- Male
 Female

3. How long have you been employed as an armoured guard?

- Less than 2 years
 Between 2 and 5 years.
 Between 5 and 10 years.
 More than 10 years.

4. Are you currently working;

- Full-time
 Part-time
 Temporary full-time

Section 2: Perception of on-the-job safety

The questions in this section will be used to identify situations when armoured messengers and ATM technicians feel safest or most vulnerable while on-the-job.

5. Please indicate when you feel safest:

- When I am working as an armoured messenger.
 When I am working as an ATM technician.
 Don't know/No difference.

If you stated that you felt safer working as an armoured messenger or an ATM technician, please indicate why:

6. Please complete the following sentence: "Whether I am working as an ATM technician or armoured messenger, I feel safest when..."

- ... I am working during the day (ie. between 6 AM and 5:59 PM)
 ... I am working at night (ie. between 6 PM and 5:59 AM)
 Don't know/No difference

Section 3: Past on-the-job incidents

The questions in this section ask about uncomfortable or dangerous incidents you may have experienced while working as an armoured messenger or ATM technician.

7. While on-duty in the past five years, has anyone attempted to make you feel threatened, injure you, or remove cash or other valuables from your control? If so, please indicate how many times this occurred. If you cannot recall the exact number of times, please provide your closest estimate.

- I can recall ___ attempts to make me feel threatened while on-duty in the past five years.
- I can recall ___ attempts to cause me injury while on-duty in the past five years.
- I can recall ___ attempts to remove cash or other valuables from my control while on-duty in the past five years.
- I cannot recall, or have not experienced, these types of incidents while on-duty in the past five years.

8. If you indicated that you have experienced attempts to make you feel threatened, injure you, or remove cash or other valuables from your control while on-duty in the past five years, please describe the incident(s) in the space below. If more space is required, please continue your answer on the back of this page:

9. If you indicated that you have experienced attempts to make you feel threatened, injure you, or remove cash or other valuables from your control while on-duty in the past five years, please describe any injuries you received from the incident(s). If more space is required, please continue your answer on the back of this page:

10. If you indicated that you have experienced attempts to make you feel threatened, injure you, or remove cash or other valuables from your control while on-duty in the past five years, please indicate whether or not you reported the incident(s) to a supervisor, and why you felt that it was/was not worth reporting. If you require more space, please continue your answer on the back of this page:

If you indicated above that you were threatened with a weapon, physically assaulted, or had cash or other valuables taken from your control while on-duty in the past five years, please continue to Section 4 of the survey.

Section 4: Description of Incident

The questions in this section attempt to get a clearer understanding of your on-the-job incident. It is important that you answer all of the questions below, and provide as much detail as possible.

11. If you described more than one incident in Section 3, please indicate which of the incidents you felt was the most threatening or dangerous in the space below. All of the following questions will be directed towards this particular incident.

12. Did this incident occur in the spring, summer, fall, or winter?

13. Did the incident occur on a weekend, or during the week?

- Weekend (between 5 PM on Friday and 11:59 PM on Sunday)
- During the week (between 12:00 AM on Monday and 4:59 PM on Friday)

14. What time of day/night did the incident occur?

- Between midnight and sunrise
- Between sunrise and noon
- Between noon and sunset
- After sunset

15. How many assailants were there?

- 1
- 2
- 3 to 5
- More than 5
- Don't know

16. What was the gender of the assailant(s)?

- All male
- All female
- Some male and female
- Don't know

17. What was the ethnicity of the assailant(s)? Check all that apply.

- Black
- White
- Native
- Asian
- Hispanic/Mexican or Spanish
- Other: _____
- Don't know

18. What was the physical build of your assailant(s)? Check all that apply.

- Short/Average (under six feet)
- Tall (over six feet)
- Muscular
- Overweight
- Thin
- Nondescript/average
- Don't know

19. What do you estimate the approximate age of the assailant(s) to be?

Youngest: ____

Oldest: ____

- Don't know

20. Please indicate what weapons (if any) your assailant(s) used/threatened to use:

21. At the time of the attack, did you think the assailant(s) were under the influence of illicit substances (i.e., alcohol or drugs)?

- Yes
- No
- Don't know

22. At the time of the attack, did the assailant(s) engage in behaviour that suggests they were suffering from a mental illness or disorder? If so, please provide a brief description of their behaviour:

23. At what point did you realize that your assailant(s) meant to threaten, rob, or attack you?

- When they were more than 20 feet away
- When they were 10 to 20 feet away
- When they were less than 10 feet away
- Once they made physical contact

24. Approximately how many bystanders were in the immediate area at the time of the incident (i.e., would have been able to see the attack taking place)?

- None
- 1 to 5
- More than 5
- Don't know

25. Were you able to see the customer's "cash room"/ATM at the time of the incident? If so, please indicate how far away you were when the incident occurred:

- Less than 20 feet away
- Between 20 and 50 feet away
- More than 50 feet away

26. Were you able to see the company vehicle at the time of the incident? If so, please indicate how far away you were when the incident occurred:

- Less than 20 feet away
- Between 20 and 50 feet away
- More than 50 feet away

27. If you were working with a partner (not including a driver), how far away were they when the incident occurred?

- Less than 10 feet away.
- Between 10 and 30 feet away.
- More than 30 feet away.

28. Please indicate which of the following applied to you during the time of the attack. Were you:

- Working with a partner (other than the driver).
- Wearing body armour.

- Using a hand truck to carry liability.
- Using an empty hand truck.
- Carrying cash parcels concealed in a “coal bag” or canvas bag.
- Carrying cash parcels that were not concealed in a “coal bag” or canvas bag.
- Carrying more than one cash parcel.
- Carrying more than 3 cash parcels.
- Transporting one or more boxes of coin.
- The only crew member outside the company vehicle.
- Able to see your destination from your starting point (e.g., from the truck to a client’s store).
- Unable to see your destination, because it was around a corner.
- Unable to see your destination, because of vending machines, vehicles, trees, benches, kiosks, or other barriers.
- Distracted/not focused on your surroundings (e.g., loading cassettes, doing paperwork).
- Having a civil discussion with your assailant.
- Having a heated discussion with your assailant.
- Speaking with someone other than your assailant or partner.
- Recovering from a pre-existing injury or illness (for example, a sports injury or the flu).
- Tired.
- Other: _____

29. Please indicate which of the following apply to the other crew members at the time the incident occurred:

- Your partner was carrying liability.
- Your partner was distracted (e.g., loading cassettes, entering alarm codes, speaking with someone other than a crew member).
- The driver was distracted (e.g., speaking on the phone, doing paperwork, etc).
- Other: _____

30. The weather at the time of the incident was:

- Clear.
- Raining heavily (e.g., a thunderstorm).
- Raining lightly.
- Snowing heavily (e.g., a blizzard).
- Snowing lightly.
- Very windy.
- Hot (over 25°C).
- Comfortable (between 15°C and 25°C).
- Cold (less than 15°C).
- Other: _____

31. The area in which the incident occurred:

- Was noisy.
 - Had a great deal of pedestrian traffic.
 - Had a great deal of vehicular traffic.
 - Had poor footing (due to ice, water, construction, etc.)
 - Had poor lighting (due to non-functional, partially-functional, or non-existent lighting).
 - Had private security or police officers on-site.
 - Was dirty/poorly maintained (litter, broken windows, used needles, broken bottles, etc.)
 - Nothing significant.
 - Other (please note anything else that is relevant):
-
-

32. Please describe any injuries you sustained from the incident described above:

33. Did the assailant(s) successfully escape the area with anything they had stolen from you?

- Yes
- No

34. If you answered "Yes" to the above question, please indicate what your assailant(s) managed to escape with:

- Some of the cash parcels.
- All of the cash parcels.
- Some of the boxes of coin.
- All of the boxes of coin.
- My firearm/my partner's firearm.
- Keys used to access a client's location/safe.
- Keys used to access a company vehicle.
- Paperwork.
- Other: _____

Section 5:

*The questions in this section ask you to describe the last time you made a pick-up or delivery at the site **before** the date of the incident described in the previous section. These questions are intended to provide a comparison to determine if the circumstances surrounding the incident differed from other occasions on which you visited this location and were not attacked, and whether and how they contributed to the incident.*

35. In the five years before the incident occurred, approximately how many times had you made a delivery or pick-up at this location?

- None
- Less than 10 times
- 10 to 20 times.
- 21 to 50 times.
- More than 50 times
- Don't know

36. Approximately what time did you arrive at the location on the last day/night you were there before the incident occurred?

- Between midnight and sunrise
- Between sunrise and noon
- Between noon and sunset
- After sunset

37. Approximately how many bystanders were in the immediate area when you arrived on the last day/night you were there before the incident occurred?

- None
- 1 to 5
- More than 5

- Don't know

38. Please indicate which of the following applied to you on the last day/night you were at the location before the incident occurred. Were you:

- Working with a partner (other than the driver).
 Wearing body armour.
 Using a hand truck to carry liability.
 Using an empty hand truck.
 Carrying cash parcels concealed in a "coal bag" or canvas bag.
 Carrying cash parcels that were not concealed in a "coal bag" or canvas bag.
 Carrying more than one cash parcel.
 Carrying more than 5 cash parcels.
 Transporting one or more boxes of coin.
 The only crew member outside the company vehicle.
 Able to see your destination from your starting point (e.g., from the truck to a client's store).
 Unable to see your destination, because it was around a corner.
 Unable to see your destination, because of vending machines, vehicles, trees, benches, kiosks, or other barriers.
 Other: _____

39. Please indicate what the weather was like on the last day/night you were at the location before the incident occurred:

- Clear.
 Raining heavily (e.g., a thunderstorm).
 Raining lightly.
 Snowing heavily (e.g., a blizzard).
 Snowing lightly.
 Very windy.
 Hot (over 25°C).
 Comfortable (between 15°C and 20°C).
 Cold (less than 15°C).
 Other: _____

40. Please indicate which of the following apply to the area on the last day/night you were at the location before the incident occurred:

- Was noisy.
 Had a great deal of pedestrian traffic.
 Had a great deal of vehicular traffic.
 Had poor footing (due to ice, water, construction, etc.)
 Had poor lighting (due to non-functional, partially-functional, or non-existent lighting).
 Had private security or police officers on-site.
 Was dirty/poorly maintained (litter, broken windows, used needles/broken bottles, etc.)
 Nothing significant.
 Other (please list anything else that is relevant):

41. Prior to the incident described above in Section 4, did anyone attempt to make you feel threatened, injure you, or remove cash or other valuables from your control at this location? If so, please describe the incident(s). If more space is required, please continue your answer on the back of this page:

42. Was the assailant responsible for the incident described in the previous question the same individual responsible for the incident described in Section 4?

- Yes
- No
- Don't know

Section 6: Thank you!

Thank you for completing this survey. If you have any follow-up questions, or would like the opportunity to see a copy of the thesis upon completion, please contact the researcher at swetstei@uoguelph.ca.

Appendix D: Sample Report Form

Name:
Date of incident:
Time incident occurred:
Transit # or location:

Type of Incident: Threats/Harassment Assault Robbery

Offender description:
 (Note: if you need additional space, please use the back of this form.)

	Name	Age	Sex	Ethnicity	Clothing	Weapons
Offender 1						
Offender 2						
Offender 3						

Brief description of the incident:

(Try to describe what caused the incident, anything that the offender[s] said to you, whether they appeared to be sober or intoxicated, whether they appeared to be of sound mind or suffering from a mental disorder, and how you and/or your partner responded.)

If there were witnesses:

	Name	Contact #	Employed at location?
Witness 1		() -	Yes [] No []
Witness 2		() -	Yes [] No []
Witness 3		() -	Yes [] No []

If the police were contacted:

Responding officer's name:
Responding officer's badge number:
Responding officer's employer (eg. OPP, RCMP):
Contact number of responding officer: () -

REMEMBER - THIS FORM IS ONLY FOR DOCUMENTING AN INCIDENT AFTER IT HAS OCCURRED. IF YOU ARE CONCERNED FOR YOUR SAFETY, CONTACT THE POLICE AND YOUR SUPERVISOR IMMEDIATELY

Appendix E: Variable Coding

	Variable Name and Coding	N (%)
Demographic Characteristics of Respondents		
<i>Sex</i>	Male (0)	104 (82%)
	Female (1)	23 (18%)
<i>Date of Birth</i>	1940 - 1949 (0)	7 (56%)
	1950 - 1959 (1)	15 (12%)
	1960 - 1969 (2)	24 (19%)
	1970 - 1979 (3)	33 (26%)
	1980 - 1989 (4)	38 (30%)
	1990 or later (5)	5 (4%)
	Missing	5 (4%)
	Occupational Characteristics of Respondents	
<i>City of Employment</i>	City A (0)	43 (34%)
	City B (1)	64 (50%)
	City C (2)	20 (16%)
<i>Length of Employment</i>	Less than 2 years (0)	12 (9%)
	2 to 5 years (1)	30 (24%)
	5 to 10 years (2)	32 (25%)
	More than 10 years (3)	53 (42%)
<i>Employment Status</i>	Full-time (0)	82 (65%)
	Part-time (1)	39 (31%)
	Temporary full-time (2)	6 (5%)
Reporting of Incidents by Respondents		
<i>Incident Reported to Supervisor</i>	Yes (0)	10 (53%)
	No (1)	4 (32%)
	Missing	5 (26%)
Respondents' Perception of Safety		
<i>Position</i>	Armoured Messenger (0)	18 (14%)
	ATM Technician (1)	33 (26%)

	No Difference (3)	75 (59%)
	Missing	1 (1%)
<i>Time of Day</i>	6:00 AM - 5:59 PM (0)	52 (41%)
	6:00 PM - 5:59 AM (1)	13 (10%)
	No Difference (2)	59 (47%)
	Missing	3 (2%)
Offender Characteristics*		
<i>Number of Offenders</i>	One (0)	8 (73%)
	Two (1)	2 (9%)
	Three to Five (2)	1 (9%)
	More than Five (3)	0 (0)
<i>Ethnicity of Offender(s)</i>	White (0)	7 (-)
	Black (1)	3 (-)
	Native (2)	0 (-)
	Asian (3)	0 (-)
	Hispanic (4)	2 (-)
	Other (5)	0 (-)
<i>Weapons Used by Offender(s)</i>	None (0)	11 (-)
	Improvised (rocks, bottles, etc.) (1)	0 (-)
	Blunt (2)	1 (-)
	Edged (3)	0 (-)
	Firearm (4)	1 (-)
<i>Offender Intoxication</i>	Yes (0)	3 (27%)
	No (1)	3 (27%)
	Unsure (2)	5 (46%)
<i>Mentally-Disordered Offender</i>	Yes (0)	1 (13%)
	No (1)	10 (88%)
	Unsure (2)	0 (0%)
Spatial Characteristics of Incident		
<i>Distance from Destination</i>	Less than 20 feet (0)	4 (44%)
	20 - 50 feet (1)	2 (22%)

	More than 50 feet (2)	3 (33%)
<i>Distance from Vehicle</i>	Less than 20 feet (0)	6 (60%)
	20 - 50 feet (1)	3 (30%)
	More than 50 feet (2)	1 (10%)
<i>Distance from Partner</i>	Less than 10 feet (0)	5 (71%)
	10 - 30 feet (1)	1 (14%)
	More than 30 feet (2)	1 (14%)
<i>Injuries Sustained by Respondents</i>	None (0)	8 (42%)
	Scratches and/or bruises (1)	0 (0%)
	Lacerations requiring stitches (2)	0 (0%)
	Broken bones or internal injuries (3)	0 (0%)
	Loss of limb (4)	0 (0%)
	Emotional Distress (5)	1 (11%)
	Missing	9 (47%)
Seasonal and Temporal Characteristics of Incidents		
<i>Time of Year</i>	Summer (0)	4 (36%)
	Winter (1)	3 (27%)
	Spring (2)	2 (18%)
	Fall (3)	2 (18%)
<i>Weather</i>	Unremarkable (0)	7 (64%)
	Snowing lightly (1)	1 (9%)
	Snowing heavily (2)	0 (0%)
	Hot (over 25°C) (3)	2 (18%)
	Cold (less than 15°C) (4)	0 (0%)
	Very windy (5)	0 (0%)
	Other (6)	0 (0%)
	Missing	1 (9%)

* Because respondents were not asked to identify the number of offenders within each ethnic category - only which categories were represented - it is not possible to provide an exact count or percentage of offenders in each category. This limitation is also present in the types of weapons the offenders used.