

**Understanding the Circumstances surrounding the use of Firearms by Police
Officers that result in Death or Serious Injury to a Subject in the Community:
A Literature Review**

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Death at the hands of the police prompts confusing emotions for victims' families, fellow police officers, government officials, and the public who must stand in judgment on the event. Given that the highest calling of police duty is to protect life, a sense that something has gone wrong is appropriate, even if the deaths prove to be legally justifiable. Many are left wondering whether there was not some other way the situation could be resolved and whether the shooting was absolutely necessary. Killings by the police rarely produce the sense of swift and sure justice that Hollywood producers seem able to manufacture. The death itself is anything but the final act in a real-life drama; it is the beginning of a long and agonizing period of much reviewing, grieving, judging, condemning, reflecting, and redressing. And when the deaths proved not to have been justifiable, doubt turns to outrage and security turns to fear.

(Geller and Scott, 1992, vii)

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Executive Summary

The study of police use of force, and especially the use of deadly force, has been dominated by American researchers, whose interest developed primarily in response to violence associated with the civil rights movement and anti-Vietnam War movement in the United States. The increasing power and reach of news media (and the entertainment industry) ensured that this interest soon spread to other English-speaking parts of the world, especially when sparked by local provocations such as particularly notorious incidents of police use of force or perceptions of high numbers of civilian deaths. Studies have now been undertaken in a number of jurisdictions, and a body of sound research is forming.

This literature review is a focused meta-analysis on the extant literature concerning the topics outlined in the objectives: the factors associated with the police discharge of firearms that result in death or serious injury to the subject, and the best practices incorporated to reduce the likelihood of these events occurring. Literature specific to the Canadian context was very limited. Most of the available research in this field was conducted in the U.S.A. a location originally omitted from this review. The authors are aware of the possible cultural issues that can arise with the inclusion of research based in areas that might be significantly different than that of Saskatchewan: specifically, very large urban centers in the United States. However, it was deemed necessary to expand the review to include literature from the U.S.A, given its overall contribution to the literature in general, as well as the observation that much of the US-based research was cited as foundational to research conducted in other locations.

Early work, especially in the 1970s and 1980s, sought to identify factors that would help explain police use of excessive force and use of deadly force whether excessive or not, and to use this to knowledge to change practice and policy in ways that would reduce the inappropriate or undesirable use of force. A number of early studies appeared to produce promising results, with the consequence that a number of officer characteristics, suspect/opponent characteristics, and situational characteristics were identified and came to be widely accepted as crucial; these were soon joined by a range of organizational characteristics, extending from police culture to policies and procedures. However, the confidence of those days gradually evaporated, as early results proved not to be robust – i.e. were not duplicated in subsequent studies – and methodological weaknesses in many of the foundational studies became apparent – either because of the recognition of design flaws in earlier research or because of the over-reliance on bivariate analysis, rather than on multivariate analysis, in those same studies (and, indeed, in social science research generally during that period). The result was that many widely-accepted truths were revisited, and by the 1990s many of them had been if not discarded, at least cast into doubt. The era of re-thinking has, however, produced a better understanding of how complex use of force incidents are, and the need for more rigorously designed programs of research in future.

Recent research has identified comparatively few officer characteristics as relevant to use of deadly force, and have eliminated such likely candidates as race and ethnicity. Very interesting is the finding that training really works – which is why, for example, race is not a factor in police use of deadly force and why the handling of “domestic” calls (always potentially explosive) does not lead to more fatalities – and this

suggests that additional training initiatives, targeted at reducing officer surprise and acceleration in use of force and at encouraging deceleration in the use of force, has the potential to result in fewer and less serious use of force incidents generally. The existence of a class of officer that is prone to the use of force suggests that more effective screening of applicants and monitoring of serving officers is needed.

Work in the area of suspect/opponent characteristics has shown, not surprisingly, that armed and physically aggressive people are more likely to provoke police use of force. Of greater interest, with respect to reducing use of force, are two other groups: the first is those whose demeanour alone is seen by officers as objectionable, and who are for that reason alone more likely to be targets of use of force. The second is the potentially very large group of people who by reason of mental impairment or as a result of use of alcohol or drugs are more likely to be targets of use of force, or who may actually seek to be targets of use of force. It would appear that purpose-designed training initiatives could go some way toward addressing problems in dealing with these two groups.

Study of situational characteristics shows that the use of force, including use of deadly force, is more likely in some types of situation than in others: specifically, this is true of arrests, but more generally is it true of any situation that results in an element of surprise or one in which an officer does not feel in “control”. The success of training in reducing the frequency and amount of force used when dealing with domestic complaints suggests that training can be of help in other areas as well. Defining what it means to be in control of a situation is also important. Serious study of incidents that do not result in use of force – rather than focussing only on incidents that do – is likely to suggest better training methods, and procedures that are less likely to lead to use of force.

Research shows that organizational characteristics are very important determinants of use of force, and are amenable to change. Factors of interest that have been identified within this large category range from aspects of police culture, including such things as an internal culture that excessively values physical assertiveness and bravery, and discourages giving reports that are unfavourable to fellow officers, through to policies and procedures, including such things as the need for better reporting and investigation of incidents of use of force, careful consideration of the desirability (or not) of adopting use of force continua and of how they are used, and even the potential problems when employing single officer patrols.

Based on the information uncovered in the literature review there are a number of possible avenues for research: (1) A trend analysis of the application of deadly force by officers in Canada (on-going), (2) A review of the independent investigations undertaken by the province of Saskatchewan into officer-involved shootings in Saskatchewan, (3) A review of Coroner’s inquests into deadly force incidents in Western Canada, and (4) An examination of the policies and procedures in Saskatchewan surrounding the use of force by officers. Each of these proposed studies has the potential to further the knowledge about the subject matter and help inform policy decisions. It should be noted that the following recommendations are limited by virtue of the limited awareness of authors of this literature review as to what data sources are available at the current time within the Saskatchewan context.

Context of the Study

In order to improve the safety of police officers and the public, the Ministry of Justice and Attorney General and the Ministry of Corrections, Public Safety and Policing would like to increase their understanding of the circumstances surrounding the use of firearms by police officers that results in death or serious injury to a subject in the community. The Ministries have commissioned this research to examine the factors associated with these incidents. The research will be conducted in stages. This component of the overarching research addresses the first stage of the research, the literature review.

Objectives of the Literature Review

The objectives of the Literature Review are to answer the following research questions:

- Determine whether the number of recent incidents in Saskatchewan where the use of firearms by police officers has resulted in death or serious injury to a subject in the community is part of a national or provincial/territorial trend. The extent of this analysis may be limited by the extent to which the Ministry is able to facilitate contact with other jurisdictions;
- Describe the factors associated with the use of firearms by police officers that have resulted in death or serious injury to a subject in the community; and
- Increase knowledge regarding best practices that have been shown to reduce the likelihood of these incidents.

In answering the research questions this literature review will incorporate the following:

1. A summary of literature from Canada, the United Kingdom, Australia and New Zealand within the past 10 years;
2. A description of key factors associated with the use of firearms by police officers that result in serious injury or death to a subject. A broad range of factors should be considered such as officer characteristics, subject characteristics, incident circumstances, police service characteristics, provincial policies, community influences and societal influences;
3. A description and analysis of national or provincial/territorial statistics collected with respect to the use of firearms by police officers that results in death or serious injury to a suspect and an analysis of those statistics;
4. A description of best-practices implemented by other jurisdictions should be incorporated into this review; and,
5. Recommendations for further research on this subject.

Answers to these research questions are required in response to the lack of research in Canada with regard to this issue as well as the recent events in Saskatchewan involving the deaths and/or serious injuries to members of the public as a result of the use of firearms by police. This is the first step of the overall research project. The overall project will seek to determine if systemic or policy modifications are appropriate and will potentially assist in minimizing the occurrence of police use of firearms situations, and if so identify possible enhancements.

Methodology

The methodology for this first part of the overall project involves a two-fold methodological approach. With respect to the first objective, the trend analysis, we are unable to present a specific analytical approach, as we have not received enough data to date to determine the appropriate method for analyzing the data. With respect to the second and third objectives, the literature review is a focused meta-analysis on the extant literature concerning the topics outlined in the objectives: the factors associated with the police discharge of firearms that result in death or serious injury to the subject, and the best practices incorporated to reduce the likelihood of these events occurring.

The literature incorporated into this review was primarily obtained through the on-line digital databases of the Dr. John Archer Library at the University of Regina. This resource provides access to over 15,000 full-text journal titles. The latter provided access to full-text articles in the academic and trade literature. Additionally, other literature sources were garnered through personal contacts, inter-library loan and general on-line searches. All of the sources used in this review were examined on the basis of a subjective review by the authors. The articles selected for inclusion in the document were chosen based on their relevance to the subject (as determined by the research questions posed to the authors by the committee), their recent contributions to the field, their stature as foundational pieces of research, and their geographic area of interest. The vast majority of the sources selected originated from peer-reviewed academic journals as well as some government funded studies and policy papers.

Literature specific to the Canadian context was very limited. Most of the available research in this field was conducted in the U.S.A., a location originally omitted from this review. The authors are aware of the possible cultural issues that can arise with the inclusion of research based in areas that might be significantly different than that of Saskatchewan: specifically, very large urban centers in the United States. However, it was deemed necessary to expand the review to include literature from the U.S.A, given its overall contribution to the literature in general, as well as the observation that much of the US-Based research was cited as foundational to research conducted in other locations. At the request of the committee overseeing this review the literature was also expanded to include some research on the general use of force literature. The use of deadly force by police officers exists within the continuum of force options that officers have at their discretion to employ, and it is accepted that it is not useful to attempt to study the use of deadly force in isolation. The literature specific to the use of firearms was extremely limited and required the context of other use of force options available to police officers.

Introduction:

The use of deadly force by the police is theoretically and practically of great importance. Although, in practice, the use of deadly force is an extremely rare event, it is nevertheless a very controversial subject (Lersch, Bazely, Mieczkowski, & Childs, 2008), that “has important consequences for both the individual and society” (Friedrich, 1977, p. 83). Reflecting the social contract and the powers bestowed upon the police, Abraham, Field, Harding, and Skurka (1981, p. 200) noted that, “society has a vital interest in ensuring that the use of deadly force by the police occurs only in circumstances in which such force conforms exactly with the law.” Of even greater importance than the legality of the use of force, the repercussions of the police use of deadly force are reported to be far reaching.

The public reaction to homicides committed by law enforcement agents can be tremendous, as was illustrated in Toronto, Canada, in 1980 by the events following the death of Albert Johnson. This police shooting sparked off public demonstrations and a wave of protest – by individuals, interest groups and political figures – over the shooting itself and the methods of investigating alleged police misconduct. The Johnson incident resulted in a severe deterioration of police-community relations in Toronto, and contributed largely to the formation of the Office of Public Complaints Commissioner and C. I. R. P. A. (Civilian Independent Review of Police Activities) to investigate complaints against the police. (Chappell & Graham, 1985, pp. 1-2)

As agents of the government, the police are entrusted to carry out a mandate that represents the government’s monopoly over the use of force in society congruent with the modern social contract. Within that context, “the police hold a subcontract under which we authorize and license them to kill, hurt, and capture nonpolice officers who would cause such harm to others” (Sherman, 1980, p. 2). As with any endowment of power the potential exists for that power to be misused and abused. Policing is not immune from this. Additionally, given their prominent position in society as guardians of law and order, they are subjected to an increased level and degree of scrutiny for their behaviour. The notion of the legitimacy, by default, attached to the police use of force in the course of their duties on behalf of the government, and by extension the citizenry, has taken root in the collective minds of most individuals. According to Manning (1980), the very fact that police officers, in the course of performing their duties, use deadly force “has been viewed as a commonsense aspect of the police role” (p. 135). Furthermore, as stated by Bittner (1970), force is at the very core of policing, that is, it is an integral component of the mandate they are required to fulfill. Nevertheless, any situation that might result in the use of deadly force provides police with a decision that must balance different and sometimes competing aspects of their mandate. As stated by Savage and Ault (1985, p. 2):

A balance must be struck between the interests of the State in apprehending suspect criminals, preventing escape and maintaining the effective arrest power of the police, and the interest in preserving

individual life and adjudicating the guilt or innocence of a suspect in accord with fundamental rights.

Given the importance of the issues and challenges surrounding the police use of deadly force within a democratic society, it is therefore not surprising that the study of the police use of force in general and, more specifically, deadly force has been the subject of investigation by many researchers and policymakers alike. Exploring and gaining an understanding of the myriad of factors that may or may not contribute to the likelihood of any given police-citizen encounter resulting in the application of deadly force by the police is crucial in attempting to limit this possibility as much as possible. These factors are the focus of this work. As a cautionary note to this research, the authors discovered, as was reported by others (Wortley & Roswell, n. d.), that Canadian research on this issue is fairly scarce. In general, “Canadian research on police violence has been greatly hindered by the fact that police services in this country *do not* routinely release official statistics on police shootings or other use of force incidents” (Ibid. n. d. , p. 4).

For contextual reasons, a very brief overview of the legal provisions within Canada surrounding the use of deadly force will be presented. Then this work will explore the findings of previous research with respect to the factors involved in police-citizen deadly encounters. These factors have been organized around themes present in the literature. They include: (1) Classic analysis: officer characteristics, suspect (opponent) characteristics, and situational characteristics, (2) Place and time analysis: when and where, (3) Organizational and systemic factors: police services and police forces, attitude and culture, outputs reasoning, continuum models, and reporting and investigations, and (4) Processual factors. It should be noted, that the organization of these factors into these categories has been done for the sake of clarity and convenience. These broad categories and the factors subsumed within them are not mutually exclusive. In many individual cases a great degree of overlap between the categories is observed to exist, making it extremely difficult to make a claim that one specific factor is the sole reason for the application of deadly force in that circumstance. Following the discussion of the previous research, we will present a discussion of “best practices” observed in the literature with respect to addressing concerns and issues relating to the use of deadly force by police. The review will conclude with a brief overview of possible avenues for additional research.

Legal Provisions for the Use of Deadly Force by Police Officers in Canada

As noted in the introduction, the use of force is a component of policing activity that an officer is likely to be faced with over the course of their career. “Due to the types of duties which an officer is called on to perform, it is of the utmost importance that he/she is legally protected for the use of reasonable and necessary force [including deadly force] carried out in the execution of his/her duties” (Chappell & Graham, 1985, p. 34). A basic introduction to these provisions is suggested as many policy implications incorporated by police services reflect the legislation governing these behaviours. This section will briefly introduce the legal provisions with which the use of force by a police officer is governed. The provisions are found to emanate from three primary sources: the Canadian *Criminal Code*, police regulations, and judicial decisions. For the purposes of this work, only the *Criminal Code* and police regulations will be presented. (For an in-

depth discussion of relevant case-law see Abraham et al. (1981) and Chappell and Graham (1985)).

Canadian Criminal Code

The *Criminal Code* is the primary source of the legal provisions surrounding the use of deadly force in Canada. Some of the provisions in the *Code* speak generally about the application of this degree of force by all Canadian citizens, while others address the actions taken by police in the course of performing their duties. Abraham et al. (1981, p. 202) stated that,

In Canada the primary source of legal control over the use of deadly force lies with the federal parliament by virtue of the *British North America Act, 1867*. The *Criminal Code* enacted under the authority of section 91(27) of the *British North America Act, 1867*, creates a number of offences relating to death caused by unnatural means which are potentially relevant to the use of force by police.

Section 25, specifically s. 25 (3) and s. 25 (4), as well as section 27 of the *Code* provide the grounds upon which the use of lethal force can be legally justified in the course of their duties. "Taken together, subsections (3) and (4) ... authorize the use of deadly force by the police in self-defence, defence of others, and to arrest certain suspects if the arrest cannot be effected with a lesser amount of force" (Chappell & Graham, 1985, p. 35). Section 27 further authorizes the use of deadly force in the prevention of a criminal offence.

Police officers, like any citizen, can be held criminally accountable for the use of force. Section 26 (Excessive Force) of the *Code* places limitations upon the amount or degree of force that can be applied within the context of any given situation. When an officer is found to deviate from this section they can be held criminally accountable for their actions. Savage and Ault (1985) provided a list of the relevant sections as they apply to criminal liability for employing lethal force. They include: Homicide (ss. 212, 213), manslaughter (s. 217), Criminal negligence (ss. 202, 204), assault (ss. 244, 245, 246), discharging a firearm causing bodily harm with intent (s. 228), and careless use of a firearm (s. 84(2)). An officer may face charges under any of these sections of the *Code* when circumstances suggest that the officer engaged in this behaviour outside of the legal justifications for such force as presented in other sections of the *Code*.

There has been some discussion regarding the breadth of permissible actions that section 25(4) of the *Code* provides officers in Canadian literature (see Abraham et al., 1981; Chappell & Graham, 1985; and Savage & Ault, 1985 for a more detailed analysis of this matter). A "common law rule" has provided a framework that outlines six generally accepted circumstances under which deadly force is deemed acceptable: "1) self-defence; 2) prevention of an imminent, life-threatening crime; 3) effecting the arrest of a person suspected of any ...serious crime; 4) capture of an escaping prison inmate; 5) recapture of a fleeing arrestee; and 6) quelling a riot" (Savage & Ault, 1985, p. 58). The general commentary found in these works speaks to the issue of the appropriateness of the use of lethal force in the case of the so-called "fleeing felon," a suspect attempting to avoid arrest. According to Chappell and Graham (1985, p. 41),

This statutory provision seems rather anomalous within a legal system which no longer condones capital punishment for even the most heinous crimes and which appears not to view resistance to, or escape from, lawful arrest as one of the more serious offences.

Savage and Ault (1985) in their discussion of the Canadian and Australian contexts, state that courts in both jurisdictions appear to address the concept of the fleeing suspect in a similar manner. “If the suspect is to be arrested for a felony, the use of lethal force to prevent escape is justified” (Ibid, p. 55). Courts in both jurisdictions, however, provide a caveat for such action in stating that all other possible means for preventing such an escape need be attempted prior to engaging in a lethal force option. One measure that has been undertaken in an attempt to address this issue is the incorporation of even more restrictive guidelines for the use of deadly force in specific policing legislation, the provincial *Police Acts* and the accompanying regulations.

Police Regulations

In addition to the provisions outlined the *Criminal Code* police regulations provide additional guidance to officers with respect to the use of deadly force, specifically that of firearms. It is important to make a significant point at this juncture. Chappell and Graham (1985, p. 79) state, “while the tendency for police regulations to restrict firearms use by members is welcomed, it should be noted that these directives do not, in any sense, alter a police officer’s legal justification for the use of force contained in the Criminal code.” Police regulations are typically organized around jurisdictional lines. That is, each jurisdiction, federal, provincial and municipal has the power to create policies for officers operating under their jurisdiction. For example, the R. C. M. P., with respect to federal policing services, has their own guidelines set out in their Operations Manual which govern their officers’ use of firearms. Additionally, most provinces, such as Saskatchewan, have *Police Acts* and accompanying regulations. The guidelines outlined by police regulations are supplementary to those in the *Criminal Code* and have been argued to be more restrictive in nature (Chappell & Graham, 1985, Stansfield, 1996). For example, Stansfield (1996) notes that the Ontario *Police Services Act* essentially eliminated the so-called “fleeing-felon” in Canada. In Saskatchewan, for example in the Saskatchewan Police Commission Policy Manual section OA 70 Vehicular Pursuit states that the “use of firearms to stop a fleeing vehicle must be avoided unless there is a clear danger to the public if the vehicle is not stopped immediately.” Additional restrictions on the use of firearms by municipal police officers in Saskatchewan are defined by the *Municipal Police Discipline Regulations*, 1991, s. 36:

- (g) improper use of firearms, that is if he or she:
 - (i) without proper authorization and when on duty carries or discharges any firearm other than one issued to him or her by the police service;
 - (ii) having discharged a firearm when on duty, other than while on a firearm training exercise, fails to report the incident to his or her senior officer as soon as is practicable thereafter;
 - (iii) fails to exercise discretion and restraint in the use and care of firearms;
 - (iv) draws his or her revolver except when he or she reasonably believes it may be necessary for the protection of his or her life or the life of another, or

when he or she believes that it is necessary in the apprehension or detention of a person whom he or she believes to be dangerous; or

(v) discharges a firearm in the performance of duty except where, on reasonable grounds, he or she believes it necessary:

(A) for the defence of his or her life or the life of another;

(B) to effect the apprehension, when other means are insufficient, of a person whom he or she, on reasonable or probable grounds, believes to be dangerous;

(C) to destroy a potentially dangerous animal or one that is so badly injured that humanity requires its removal from further suffering; or

(D) to give an alarm or to call assistance

According to Chappell and Graham (1985) these types of additional restrictions are fairly consistently found across jurisdictions in Canada. Furthermore, they argue that, “the key distinction between these regulations and the use of force legislation in the Criminal Code is the term ‘dangerous.’ The police regulations require that a fleeing suspect be considered dangerous before firearms are to be discharged, even as a last resort” (Ibid. p. 77).

Whether a police shooting is justified based on legal or policy-oriented provisions does not alter the impact that such an event can have as a result. It is with this observation in mind that this review of the literature continues with a discussion surrounding the various factors identified in the literature that are associated with the police use of firearms.

Factors Associated with the Police Use of Firearms

As noted in the introduction to this work, previous research studying the various factors associated with the police use of deadly force are generally discovered to address a number of broad categories, including: (1) Classic Analysis, (2) Place and time analysis, (3) Organizational and systemic analysis, and (4) Processual factors. The theoretical perspectives that underlie these research enterprises are observed to arise out of the psychological, sociological, and organizational disciplines. This section outlines the research previously undertaken in these areas.

Classic Analysis

The so-called “classic analysis” has tended to focus its attention to this matter of investigation into three areas: (a) the characteristics of the officer, (b) the suspect (opponent) characteristics, and (c) situational factors. Each of these broad themes that emerged from the previous literature will be presented here.

Officer Characteristics

The individual characteristics of police officers are frequently cited as factors that contribute to the application of deadly force by the police in their encounters with citizens. According to Terrill and Mastrofski (2002),

The theoretical perspective that tends to underlie this avenue of the research arises from the field of psychology. There are two dimensions to this approach. The first focuses on the impact of individual officer characteristics and the second delves into the impact of an officer's views and attitudes as they relate to the use of force. (p.18)

Incorporating the useful dimensions outlined by Terrill and Mastrofski (2002), the officer characteristics can usefully be organized around the dimensions of physical or objective characteristics and an officer's propensity for violence and attitudes.

Physical or Objective

"Patterns in which officers with certain characteristics appear to have elevated chances of becoming involved in use-of-deadly-force encounters naturally lead to the question whether officers with particular attributes have a special propensity to be violent" (Gellar & Scott, 1992, p. 157). Previous research attempting to answer this question has pointed to a number of factors that may be associated with an officer's use of deadly force, including: the officer's race, gender, age and experience, their duty status and assignment, as well as the level of stress that an individual police officer may experience as part of their chosen occupation.

The question of an officer's race and the impact that may have on the use of deadly force has been addressed by many researchers (Friedrich, 1977; Gellar & Scott, 1992; Terrill & Mastrofski, 2002; Alpert & Dunham, 2004; Alpert, Dunham & MacDonald, 2004; and Wortley & Roswell, n.d.). The focus on the officer's race with respect to likelihood of the application of deadly force is premised on the concept of racial bias stemming from the observation that racial minorities tend to be the victims of such force. For example, in their research within Canada, specifically, Toronto, Wortley and Roswell observed that, "the results presented ... strongly indicate that African Canadians and Aboriginals are grossly over-represented in police use of force statistics in general – and police shooting incidents in particular" (p.26). Similar findings of the over-representation of minorities in such incidents are apparent in many other studies (see below, suspect characteristics). Theories such as the "racial animus model," the "devaluation model," the "stereotype model" and others suggest that the race of the suspect, and therefore, at least to some degree, the race of the officer, is important in explaining the deadly force encounters (see Wortley and Roswell, n.d. for a more detailed overview of the theories).

Research that included race as a possible independent variable has not definitively supported the claims of racial-bias in police shootings. Friedrich (1977) noted that "differences with respect to racial prejudice are smaller than might be expected, given the attention the factor has received as a cause of police brutality" (p. 90). However, he did not completely rule out the role that race may have in officer use of force incidents. In the summary of his findings he stated that, "most notable is the infrequent use of force by racially mixed teams. Perhaps the presence of a 'different' partner heightens sensitivities and exerts a restraining effect" (p. 90). Gellar and Scott (1992), Terrill and Mastrofski (2002) and Alpert and Dunham (2004) each report findings that actually contradict the notion of racial prejudice, but not necessarily race in and of itself, as they suggest that minority officers are more likely to shoot citizens of the same racial group. Alpert and

Dunham (2004) suggest, however, that given the ethnic diversity observed in many neighbourhoods, there might be a potential pattern emerging. If, and only if, their results are accurate, “then a possible conclusion is that ethnic groups feel more comfortable using force against suspects from their own group” (p. 70). The conflating effects of any number of other variables of interest to the police use of deadly force have a net result, with respect to the question of race, wherein the findings are not conclusive in multivariate analyses. “Unfortunately there are no definitive answers concerning the importance of race, and only a few studies have shown that race explains a significant amount of force or level of force by police” (Alpert, Dunham, & MacDonald, 2004. p. 477).

The next officer characteristic of interest has been that of gender. As with race, the question of the significance of an officer’s gender arose from the statistics on police shootings that indicate that “virtually all civilians shot by police are male (Gellar & Scott, 1992, p. 176). The research on this factor has been again mixed and inconclusive. For example, Blumberg (1986) suggests that female officers are much less likely than their male counterparts to use deadly force. Gellar and Scott’s (1992) summary of the research that takes into account an officer’s gender supports the conclusion drawn by Blumberg. However, these authors are careful to note that the results might be attributable to other factors such as the consideration that, “female officers in many jurisdictions may be disproportionately assigned to police agency units *unlikely* to become involved in violent confrontations with suspects” (Gellar & Scott, 1992, p. 178). Other research has provided evidence to the contrary. Terrill and Mastrofski (2002) found no gender effects in the use of force by officers. Similarly, Paoline and Terrill (2004) found that female officers demonstrated no reluctance to use coercion in their encounters with citizens. It should be noted that another confounding issue with respect to this factor has been the relatively small number of female officers compared to the numbers of male officers. As such, there is a paucity of data from which to draw definitive conclusions.

An officer’s age has been another avenue of investigation for researchers in this area. According to Savage and Ault (1985), the evidence with respect to the relationship between an officers’ age and their involvement in shooting incidences remains inclusive at best. A major problem with the research is that it, to date, had not taken into account the assignment of the officer when investigating the relationship, a factor argued to be important. Nevertheless, these authors note that, “conventional wisdom has it that younger officers are more aggressive and, therefore, likely to make more mistakes than older officers” (Savage & Ault, 1985, p. 85). US-based studies (Geller and Karales, 1981; and Shenkman, 1981; As cited in Savage and Ault, 1985)) have reported that the average age of officers involved in shooting incidents is approximately 30 years old. Relevant to age and experience, but additionally to the issue of training, Griffiths (2008) stated that, “it may also happen that officers inadvertently escalate a situation or provoke an assault because they are unable to communicate or because they lack basic policing skills. The likelihood of this may be higher among younger police officers with less experience” (p. 205). Other research into the age of the officer presents inconclusive and contradictory findings. Blumberg (1985) suggests that the younger and less experienced the officer the greater the likelihood that they will become involved in a shooting incident. Alpert’s (1989) research, however, disputes these findings providing results contradictory to Blumberg’s. Finally, with respect to an officer’s age, Savage and Ault (1985) discuss US-

based experimental studies employing simulations. The results again are divided. One study suggested, “no relationship existed, while the other posited that a strong relationship existed” (Savage & Ault, 1985, p. 85).

Although the question of an officer’s experience as it relates to the use of deadly force is often conflated with that of the officer’s age, given the previous research it appeared to warrant its own presentation. “Research examining the length of time spent as a police officer found that as many as 52% of police officers involved in shooting incidents had been on the force less than five years (Kobler, 1975); 75% less than 10 years (Geller and Karales, 1981); and the average length of time appeared to be 5.1 years (Shenkman, 1981)” (Savage & Ault, 1985, p. 86). Stansfield (1996), citing American studies, suggests that less experienced officers are more likely to use deadly force; however, additional studies refuted this claim. Additionally, this may be related to the higher rates of unintentional discharge of firearms by younger officers. Terrill and Mastrofski (2002) found that, although research has shown that less experienced officers are more active (e.g. make more officer-initiated stops) (Worden, 1989) and patrol more aggressively (Friedrich, 1977) than their more experienced counterparts, an officer’s experience appears to have little to no direct influence on his or her use of force behaviour (either reasonable or excessive) (Garner et al. 1995). Friedrich (1977) stated, “There is only the slightest indication that more experienced officers use force more reasonably and less excessively than less experienced officers, as some research has suggested” (p. 89). Alpert, Dunham and MacDonald (2004) discussing the use of what they refer to as “asymmetrical force” found no relationship between the officer’s use of this force and their experience. Finally, Terrill and Reisig (2003) comment that an officer’s experience may be related to their application of force, but that this is in conjunction with the hypothesis of “ecological contamination” as put forth by Werthman and Piliavin (1967) might provide an explanation. “Based on previous experience, officers may come to know or identify certain places as problem places just as they may come to know certain persons as problem persons” (p. 307). As such, their experience can translate into perceived danger which may impact their decisions to use force and to what degree.

The literature on shootings by police that incorporate a discussion of the variables of education and training provide insight into another group of officer background characteristics. As with the other individual officer characteristics the research findings are mixed and oftentimes contradictory. Emanating from the literature is an apparent hypothesis which suggests that the more educated the officer is the less likely they are to engage citizens with force. Savage and Ault (1985) observe that there is little evidence to suggest that college-educated officers are less likely to use deadly force than officers without a college-education are. Cascio’s (1977) research suggested that officers with more education received fewer citizen complaints with respect to their application of force. However, Worden’s (1995) analysis discovered that although officers with a four-year college education were actually more likely to use force than lesser educated officers were, the force they used was more often than not deemed ‘reasonable.’ However, somewhat contrary to Worden’s findings, Terrill and Mastrofski (2002, p. 238) concluded that “encounters involving officers with higher levels of education were significantly less likely to involve force than were those involving officers with lower levels of education.” As a possible explanation for the incongruence in the findings regarding early studies of

the impact of education; Savage and Ault (1985) suggested, “either education has no impact on the use of deadly force, or the post-secondary education that officers receive is too similar to police academy training to make a difference or, as the authors propose, the effects of youth and inexperience override any effect of education” (p. 87).

The available research that specifically addresses officer training is less readily available than that for other background variables. Although there has certainly been a hypothesized relationship suggesting that an increase in officer training will have an impact on reducing their use of deadly force, this factor remains relatively unexplored. According to Terrill and Mastrofski (2002), “one reason why this information may be absent in most studies is the difficulty of obtaining information on training that can be linked to individual officers. Another reason may be that researchers consider such variables as length of service and education to be adequate proxies for training” (p. 221). Some recent research into this avenue of inquiry is encouraging. Although not addressing the specific relationship between use of force training and resulting behaviour in the field, Bennell, Jones, and Corey (2007), these researchers recognized the importance of an officer’s training and sought to test various learning theories so as to test the effectiveness of the training principles. Their findings and recommendations provide insight with respect to how better train officers in the use of force thereby enhancing their activities in the field.

The degree of stress that an individual officer experiences in performing the day-to-day work of policing has also been studied with respect to its relationship to an officer engaging in violent behaviour. Kop, Euwema, and Schaufelli (1999) and Kop and Euwema (2001) investigated the relationship between burnout (depersonalization, personal accomplishment, and emotional exhaustion) and the use of force by police officers. The main source of stress that was discovered is organizational rather than job-related. Their findings suggest that burnout (specifically depersonalization, but also to some degree emotional exhaustion) is correlated with officers using force towards civilians. Based on the observational aspect of the study they determined that officer characteristics (as related to burnout) were significantly more determinant of the use of force than were situational characteristics. Manzoni and Eisner (2006) tested strain theory when investigating the hypothesis that stress and burnout result in an increased likelihood of officers using force to achieve their mandated occupational objectives. On a bivariate level, there is a significant relationship between use of force and work stress, job satisfaction, commitment and burnout. However, multivariate analysis does not demonstrate this and the influence of these factors with respect to the amount of force that is used by an officer is not significant. The key predictor of police use of force is the job profile. Lee and Brotheridge (2006) stated that when there is a mismatch between a number of factors (workload, control, rewards, fairness, community and values) an officer is likely to experience burnout (emotional exhaustion, depersonalization and reduced personal accomplishment) this in turn has negative impacts on officers (job performance decrements, withdrawal, reduced physical and psychological health and spillover into home life). They too cite previous work stating that depersonalization as a part of police burnout was related to increased use of violence by police officers towards citizens.

Propensity for Violence and Attitudes

The second area of officer characteristics that has been studied is that of the officer's pre-disposition for violence as well as the impact that attitudes incorporated into an officer's mindset may have with respect to the likelihood of them engaging citizens with force. The first, the notion of the "violence-prone" officer, addresses an individual orientation toward violence that may distinguish between a so-called "good" cop and "bad" cop. The second variable of interest is that of an officer's attitudes in relation to both their job and the citizens they are employed to serve.

The theory of the violence-prone officer has been attributed to work of Toch (1996). Toch's conceptualization of the violence-prone officer arose out of his research investigating the use of force by officers within the Los Angeles Police Department. This research did not specifically address the use of deadly force but rather the misuse or abuse of force in general. As such, the findings are limited to an overall discussion of officer abuse of force and not necessarily directly correlated to the use of deadly force applied under either appropriate or inappropriate circumstances. Nevertheless, the most recent research in the field suggests that factors contributing to the use of deadly force by officers cannot be understood outside the wider context of use of force in general. One of the key findings that arose from this research was the significant overrepresentation of a relatively small number of officers in the percentage of total incidents involving force that were reported for the entire department. "The key fact is that of dramatic overrepresentation ... 44 officers in the LAPD were involved in an average of 13 uses of force compared to 4.2 for all officers to be using force" (pp. 94-95). In seeking to come to an understanding of this phenomenon Toch was careful in his analysis to control for other possible variables that might explain the significant differences in these officers' application of force such as where the officers were assigned (i.e. high crime-rate neighbourhoods, etc.), to what types of units (i.e. patrol, investigative, tactical, etc.). Despite the introduction of these controls, he was not able to reduce the significance in his findings of disproportionate force. As a result of this discovery Toch described what he referred to as the "problem officer", "such officers would be said to manifest a *propensity* to use force, and one could predict that they would continue to manifest propensity, given invariant conditions" (pp. 95-96). Following this realization, the question that Toch proceeded to answer was when/where this propensity would come from. Was this propensity to violence inherent in the psychological make-up of the officer prior to entry into the police force, or did it develop as a result of their experience? Although he found that "the motives of violence-prone officers tend to be compatible with 'hard-nosed' organizational goals, which make the officers appear subservient to mandates from the organization" (p. 98); he did not discount the possibility for a pre-disposition to these behaviours. "The model as developed leaves room for violence-prone officers to arise as in-house products or to be recruited ready-made and then protected by departmental policies, or to be the result of a combination of predispositions and reinforcements" (p. 98). Regardless of the originating source of this possible predisposition to violence, Toch noted that, in terms of a police force attempting to prevent such incidents, that the best predictor of future violence is a discernible pattern of past violent behaviour. "The 'problem officer' by definition experiences degenerating

incidents with frequency. “Incident-centered approaches become person-centered approaches when one compiles incidents over an officer’s career and sees the officer as a composite of what he or she has been involved” (p. 107). This finding inherently suggests implications for policy regarding hiring practices (if indeed this is an inherent trait) and tracking all officer use of force incidents (regardless of this being inherent or organizationally related).

The final individual officer characteristic that previous research has investigated is the relationship between an officer’s attitudes and their use of force in police-citizen encounters. According to Terrill and Mastrofski (2002) this line of inquiry has developed out of the literature in the discipline of social psychology from which they stated that, “in the context of police force, such a theory presumes that officers with certain views behave differently from those with dissimilar views” (p. 218). Discussing some of the earlier research in this area, Terrill and Mastrofski stated,

Muir was primarily interested in characterizing "good" versus "bad" police officers on the basis of observations conducted during the 1970s. He constructed a fourfold typology into which officers could be grouped, depending on two dimensions: their views of human nature and their attitudes toward the use of coercive authority. According to Muir, officers who have little to no empathy for citizens and view force as an acceptable control mechanism are the most likely to resort to force. Others have also constructed typologies of officers on the basis of various dimensions to explain the use of force (Brown, 1981; White, 1972), but there is little systematic evidence to document the impact of officers' belief systems on the use of force. (2002, p. 221)

Testing earlier findings reported by Worden (1995) that suggested a three-fold attitudinal argument with respect to the use of force by officers (wherein negative attitudes towards citizens increases likelihood of use of force; favourable attitudes toward use of force increases the likelihood of force; and the officers’ view of the role of the police). Terrill and Mastrofski (2002) concluded that none of these measures were significantly related to the officers’ use of force. However, they did note that, “although officers did not take these attitudinal measures into account, they did take various traits of citizens (e.g. gender, race, age, and economic status) into account” (p. 239).

The research of Alpert, Dunham and MacDonald (2004) is also of interest in this vein of inquiry. These researchers investigated the concept of the asymmetrical nature of the police-citizen encounter and its relationship to police violence. Discussing their results the authors suggest that, “it appears from this analysis that use of force incidents are more likely to be asymmetrical when police are confronted with resistance from citizens who are not perceived as important” (p. 483). This is argued to be the case as, in congruence with the theory of asymmetrical relationships, the officer perceives those of lower status to themselves as less important and their “resistance is viewed by the police as more than simply resisting their attempts at control but is seen as resisting the generally accepted social norms” (p. 478). Related to the work of Alpert et al. (2004) and Terrill and Mastrofski (2002) is the so-called “dirtbag syndrome” wherein officers have a tendency to dichotomize people into two categories, “those who deserve to be punished and those who do not ... Such cynicism may translate into the perception that those occupying certain neighborhoods [or people residing outside the area that are in the area]

must be up to something, which translates into more coercive patterns of behavior” (Terrill and Reisig, p. 308). This becomes even more problematic as in certain communities, it may be perceived by an officer that, “force is seen as an acceptable mechanism of conflict management in an environment which force by forceful means is more the norm” (p. 308). This may translate into an attitude suggesting that this type of behaviour, although not widely accepted by society is appropriate within the context of this individual community. Despite the discussion above, the relationship between officer attitudes and deadly force remains elusive. “In short, most explorations regarding the links between attitudes and police behavior have been impressionistic at best” (Terrill and Mastrofski, 2002, p. 221).

This section has sought to provide a discussion of the individual officer characteristics that might explain the potential for the application of deadly force in the police-citizen encounters. It has sought to provide a review of the research that looks to answer the prevailing question, are there any individual officer characteristics, or combination thereof, that can explain the use of deadly force. Given the preceding discussion, it appears that the conclusion stated by Gellar and Scott (1992, p. 157), that “there is virtually no empirical support for assertions that individual officers’ characteristics are measurably related to any type of performance in office,” is supported in this review. However, the discussion has also alluded to many questions in the research methodology and approaches used in previous research. This suggests that further investigation into this avenue of inquiry is warranted. Having concluded this section we now turn our attention to another area of focus in the literature, the characteristics of the suspect/opponent and the impact these may have in explaining this phenomenon.

Suspect/Opponent Characteristics

Suspect characteristics have frequently been cited as among the factors involved in use of deadly force by police. For the purposes of discussion they can usefully be divided into two categories: physical or objective, and behavioural.

Physical or Objective

Early research identified a number of what might be termed physical or objective characteristics that seemed to be associated with police use of deadly force, and by the 1970s – see, for example, Black (1976) – a number of what have often been termed “sociological” qualities had been proposed that might make a suspect more likely to be the target of police use of force generally, and use of deadly force in particular. These were aspects of a suspect’s socio-economic and cultural status; thus, someone who was male, poor, a member of visible minority or young – or better yet, all four – would be a more likely target of police use of force.

There was some support for this hypothesis, but more recent research has tended to show one or more of the following:

- that these factors do not seem to be associated with or are not consistently associated with an increased likelihood of police use of deadly force
- that the factors relating to police use of deadly force are much more complicated than at first appears, rendering these superficial characteristics less significant

- and that relationships which emerged using bivariate analysis have disappeared when the data – sometimes the very same data – is subjected to multivariate analysis

The question of minority status – or “race” as it appears in the literature – illustrates these problems.

There is abundant statistical evidence from the United States to support the assertion that more African-American and Hispanic people are shot by police than is warranted on the basis of their percentage of the population: i. e. to put it baldly, a member of a minority has a greater chance of being shot by police than a white person (e. g. according to recent government statistics an African-American has a likelihood of being shot and killed by the police that is five times greater than that of a white person). However, the important question is: Why? And in particular: Is it because the person is a member of a minority? The answer to the latter question that is emerging from the research appears to be “no”, or at least “not exactly”. One reason for this ambivalence stems from where minority persons are likely to live: they are less likely to live in suburbs and upper middle class neighbourhoods – areas with lower incidence of violent crime, homicides and police shootings – and are more likely to live in inner-city neighbourhoods – areas with higher incidence of violent crime, homicides and police shootings. (See section on “Place and Time” below.) This may mean that it is where they live, rather than their minority status, that has led to members of this group being killed in larger numbers.

A second factor that very much complicates analysis is the fact that police officers who are members of minorities have a greater likelihood of being stationed in inner-city neighbourhoods and are more likely to be involved with shootings. It seems unlikely that minority officers are more prone to use of deadly force *per se*, and are more prone to use deadly force against members of their own group; rather, it seems likely that they are simply stationed in places where they are more likely to need to use deadly force, and that the people against whom they need to use deadly force are more likely to be members of their own group. A further refinement is introduced when questions are raised about whether minority officers feel the need to be tougher, especially with members of their own group, in order to establish their “credentials” with fellow officers, and whether this leads them to greater incidence of use of deadly force with members of their own group.

The question of “race” also plays into another factor identified in a number of studies as relating to the incidence of police use of deadly force: socio-economic inequality. Studies in the United States (Jacobs and Britt, 1979; Jacobs and O’Brien, 1998 especially) have investigated this, and suggest that in this case the “race problem” is not so much a race problem as it is a social or political problem: i. e. that police use of deadly force is to a significant degree a reflection of socio-political realities. In a similar vein, the Canadian researcher Rick Parent (2003) has noted that, “unemployed individuals, regardless of race, are more likely to be involved in confrontations with police.” Here again, members of minorities may be more likely to be unemployed, and for that reason come into conflict with police, rather than because of their minority status. All of this suggests that minority status may not, after all, be a significant factor in police use of deadly force. Indeed, a study published in 2007 (Correll et al.) showed that, though police reflected the frequently racist attitudes of the community in which they worked

(Colorado), their training was sufficient to ensure that this did not translate into a greater tendency to shoot members of a minority race.

These issues led Riksheim and Chermak (1993) to observe that “although the use of deadly force was studied extensively during the 1980s, we probably know less than it appears” (p. 376). Unfortunately, studies conducted since then have not done as much as would have been wished to rectify this situation, and it is probably fair to say that only two objective suspect characteristics have been shown to have a positive correlation with police use of deadly force: gender (males are more likely to be killed than females), and visible possession of a weapon.

Behavioural

The rather meagre results from enquiry into the physical and objective elements of suspect characteristics associated with police use of deadly force are not matched by results from enquiry into behavioural elements. There, substantial progress has been made in identifying suspect characteristics that have a positive correlation with police use of deadly force.

One that has led to considerable controversy is the fact that attempts by a suspect to flee questioning by police or attempts to arrest the suspect tend to prompt police to use force to stop the suspect’s flight. The controversy here is not over whether there is a positive correlation – this seems undeniable – but over the measures police ought to take to deal with a fleeing suspect and in particular what circumstances might justify the use of deadly force to stop a fleeing suspect. Until recently, as an artefact of early times, when virtually every felony was punishable by the death penalty, most common law jurisdictions allowed police to use deadly force to stop virtually any fleeing suspect. Policies have changed this, in some places, and most writers are of the opinion that much more restrictive policies ought to be put in place, limiting the circumstances under which police may use deadly force to apprehend a fleeing suspect: to counter an imminent threat to life.

Two other behavioural characteristics that have been identified by research as positively correlated with police use of force generally, and use of deadly force in particular, are resistance and demeanour. (Crawford and Burns, 1998; and Alpert and Dunham, 2004) The idea that a suspect who resists police – especially if that resistance takes a physical form – has a greater likelihood of being the target of police use of force, and even use of deadly force, is unsurprising, and few would argue that it is not proper (and even necessary) for police to take reasonable measures to overcome the suspect’s resistance. However, there is a question about how far these “reasonable measures” might lead the police in a particular case. Part of the answer to this question is “policy”; the other part is police training and actually putting policy and training into effect in the field.

Demeanour is, in most respects, a more difficult matter. Substantial research shows that a failure to show deference to police – which is often perceived as a form of resistance – is likely to provoke a response from officers: not infrequently an aggressive response. This has been explained in terms of a perceived threat to the legitimacy of the law, and ultimately of the state, to the police generally, and to those officers involved particularly. Since these interests are so important, action, even aggressive action, may be taken to protect them, and this can escalate all the way to the use of deadly force. Study of this phenomenon falls within what has been termed “Authority Maintenance Theory”

(Alpert and Dunham, 2004, p. 171) and speaks to the imperative that can drive police to achieve “control” over a situation. The question of central importance here is the meaning of the word “control” (Baker, 2009: in the Australian context). If it means the immediate acquiescence of a suspect, and his visible acknowledgement of the dominance of the police, it follows that in a very real sense it is the logic of the situation, or even the suspect, that is in control, since as long as the suspect withholds that acknowledgement the police will have no choice but to escalate their attempts to assert their dominance. On the other hand, if “control” of the situation can also mean “containment and management” of a situation it follows that a number of different courses of action are possible. Police use of negotiators provides an example of this, and one where the likelihood of an incident ending in the use of deadly force is actually reduced the longer the final resolution is postponed (Best and Quigley, 2003: in the UK context). It is clear, then, that “control” must be addressed carefully in policies and in training.

Finally, there is the question of suspects who either seek to be shot by police – what is often termed “suicide by cop” – or who because of mental impairment engage in behaviour that increases the likelihood that they will be shot. Though quite distinct, these types have usually (and unfortunately) been addressed together in the literature.

In individuals who intend to manipulate the police into killing them, the motives can vary: from a desire to circumvent a religious taboo on self-destruction, to a desire to be killed by someone seen as a faceless person who is known to carry deadly weapons and to know how to use them efficiently, and who is near at hand. Determining the number of such individuals is difficult, especially since those with suicidal tendencies have usually been grouped together with other categories. Rick Parent, for example, who is the leading researcher in this area in Canada (and has also looked at data from the United States), has suggested that between a third and a half of the people killed by police were either seeking suicide or mentally impaired. This figure is certainly high, but it accords well with what other scholars have found in other jurisdictions. Based on police killings between 1998 and 2001 in the United Kingdom, for example, Best, Quigley and Bailey (2002) found that “[a]round half of the shootings examined have some evidence indicating a suicidal motive in those shot, and further indications of irrational behaviour in a number of other cases” (p. 2).

It may be argued whether those who are seeking self-harm are suffering from a mental impairment, but it seems clear that they may be considered to be rational, in the sense that they have reasons for what they are doing and what they are hoping to accomplish by their behaviour. The same may not be said, however, of those who are suffering from a mental illness or who are impaired because of consumption of alcohol or use of drugs. The number of people in this category is substantial – acknowledged to be larger in recent years in the United States at least, because of policies that have taken many mentally ill persons out of institutions – and they present a considerable challenge to police. For example, in a recent Australian study (Baker, 2009, p. 143) noted that in 1994 in Victoria, six out of nine persons killed by police had a history of mental illness. Such persons may not be rational, in the sense given above, and they may not be capable of engaging in the “exchange of deference” that characterizes most encounters between police and citizens (Alpert and Dunham, 2004, p. 40). They may not perceive the world as it really is, they may be depressed, they may be reckless in their behaviour, they may be negligent in their behaviour, and, arguably most problematic of all and especially

common in the case of users of illicit drugs, they may be in a more or less permanent state of low arousal (in a psychological sense), and therefore either passive to the point of ignoring police or the dangers around them, or reckless and aggressive. Such persons will, of course, present a great challenge to police, who must deal with them in ways quite different from the ways in which they may relate to other citizens. When they do not do so, or are unable to do so, violence becomes more likely, and also the use of deadly force. To conclude that policies and training need to take these stark realities into account is to state the obvious.

Situational Characteristics

The final feature of the classical analysis of factors relating to the police use of deadly force includes the various situational factors. In addition to the specific factors described below under “place and time” analysis, a number of other situational factors have been discussed in the literature. These include: (1) the mobilizing event, (2) concerns for officer safety, (3) and police tactics.

The discussion surrounding “mobilizing events” is the result of researchers looking at the specific criminal event as well as the type of stop that precipitated the shooting event. Researchers have hypothesized that the type of incident that an officer is called upon to address is likely to have an impact on the likelihood of the event concluding with the application of deadly force. Although any criminal incident has the potential to escalate to a situation where the use of deadly force is required of the responding officer, Gellar and Scott (1992) report that “persons suspected of violent crimes (especially armed robbery) will respond to police intervention by attempting to injure an officer” (p. 144). This line of inquiry is related to the question of danger/risk that each type of criminal event presents an officer. Using standardized categories of various crimes, while at the same time recognizing that reporting of specific crimes can vary from one jurisdiction to another¹, Savage and Ault (1985) as well as Gellar and Scott (1992) have summarized the findings from a number of research studies. Furthermore, these studies present data from fairly limited case studies, as such; the information reported will provide a range of the percentage of the different crimes to provide a more generalized picture of the situation. With the exception of the study by Chappell and Graham (1985) these results reflect the research conducted in the United States.

In accordance with these summaries, “disturbances” were the single-most reported crime to precede an eventual application of deadly force by the police. This crime was reported as the preceding event in approximately 25 – 35% of the cases. However, clarification of this category is required. These calls for attendance included both domestic and non-domestic “disturbances.” It is widely thought that domestic disturbances are greater in their inherent risk to officers than non-domestic disturbances and therefore, suggests that an increase likelihood of force might be expected. Terrill and Mastrofski (2002) report that situations involving “conflict between citizens as a preceding event increased the likelihood of force being used” (p. 241). However, the

¹ For example, in an incident where, during a routine traffic stop, the officer encounters an individual with a gun, the report generated may include the most serious aspect (the presence of the gun) or report both aspects within one case file.

distinction is important as contrary to popular belief, Gellar and Scott (1992) report that officer risk is not nearly as high in the case of domestic disturbances as one might assume. Presenting the data for situations that resulted on the death of an attending officer, the authors report that domestic disturbances accounted for approximately 5% of the cases, significantly lower than many other calls (for example, attempting arrests, robbery, and traffic). Returning to the data, Savage and Ault (1985) report the following percentage ranges: Robbery (20 – 39%), Burglary (25 – 30%), and traffic stops (8 – 30%). Gellar and Scott (1992) report the following for the same crimes: Robbery (21 – 39%), Burglary (7 – 20%), and traffic stops (8 – 12%). Interestingly, the Canadian figures presented by Chappell and Graham (1985) present numbers fairly similar to those found in the United States. Their findings, based on their study of 14 cases of police-shootings in Toronto, found that burglary and traffic stops each accounted for approximately 21% of the shooting incidents (three each out of the total 14 incidents, a finding reflective of the US-based studies but too limited in its scope to be generalizable to the entire Canadian context).

Related to the type of call that the officer responded to is the means by which the officer was “called”. Gellar and Scott (1992) refer to this as the “mode of mobilization.” “As distinguished for the *events* that mobilized officer intervention in potentially violent situations, the *mode* of mobilization refers to the source of the officer’s knowledge that his or her service is needed” (Ibid, p. 145). This feature of the event is of interest as it relates to the information that an officer has before engaging in their response to the event. In general, the findings suggest that the greater the amount of information an officer has in advance of their intervention, assuming that the information they obtain is correct, the better they are able to assess the potential for danger and adjust their method of intervention accordingly. Gellar and Scott (1992) provide an overview of the three traditional categories of officer mobilization. These include, “dispatch, on-view (officer notices a need for intervention while in the field), and citizen complaint (a citizen hailing an officer in the field rather than calling central dispatch)” (p. 145). Although not discussing the mode of mobilization directly, Terrill and Mastrofski (2002) state that, “proactive stops were significantly more likely to involve higher levels of force” (p. 239). The research by Gellar and Scott (1992) introduces possible implications for this aspect of understanding police shootings as it relates to police tactics and the concept of “averted shootings” (see Best Practices below). The amount of good information that an officer has in advance of the event may assist them in making decisions prior to intervention that may reduce the likelihood of the event resulting in the officer having to resort to deadly force.

The safety of an officer and other civilians is a paramount situational consideration that may reduce the risk of harm to police and civilians alike. Researches into various aspects of police operations and response have been studied for their impact on deadly encounters. The main areas of investigation in these studies have focused on: (1) the duty status and assignment of the officer, (2) one-versus two-officer units, (3) the nature of the unit, and (4) situation management.

The discussion in the literature regarding the duty status and assignment of an officer primarily raises the concern of that safety of and shootings by off-duty officers. As noted in the methodology section previously, the information presented here is part of the larger context of police use of firearms but is not necessarily relevant to the

Saskatchewan or Canadian context given the national policy restricting officers from carrying firearms when not on duty. As noted by Gellar and Scott (1992, p. 161), “most civilian victims of police shootings are shot by on-duty officers, although the percentage of off-duty shootings is considered quite larger by several observers.” The data that these authors report suggests that somewhere in the range of 13 – 26% of civilians shot by police involved off-duty officers. These numbers are argued to become more of an issue when one considers the findings reported by Fyfe (1978) that “revealed that the percentage of improper and criminal shootings is greater among those involving off-duty police. Four in ten of these shootings warranted some administrative or criminal sanctions, compared to slightly over two in ten on-duty shootings” (Cited in Savage and Ault, 1985, p. 97). Similar numbers are reported by Gellar and Scott (1992) where they report that approximately between 13 - 40% of off-duty shootings by officers were considered to be “out of policy.” As these authors state, to put it differently, in the case of findings in Chicago, “74% of all officers whose shootings were disapproved of were off duty” (p. 163).

The circumstances in which shootings by off duty officers have taken place have also raised questions about departmental policies that either permit or require off duty officers to carry their weapons (Savage and Ault, 1985)². Cited (1980), reports that of the off duty shootings that took place nearly 25% of them were unrelated to actual law enforcement situations. “Almost one-half of these incidents were accidental, resulting in officers shooting themselves, their families, friends or strangers. Officers using their guns on themselves made this the largest single cause of death among officers” (Savage and Ault, 1985, p. 97). Gellar and Scott (1992) present another risk factor, victimization of the officer, or their family with their own gun at the hands of a criminal. Finally, the issue of accidental shootings of police is as it relates to their duty status is their attire (as well as the presence of the gun). “There is a high correlation, of course, between an officer’s duty status and attire (the vast majority of off-duty officers are likely to be in civilian dress when they become involved in shooting incidents)” (Gellar and Scott, 1992, p. 166). Rutledge (1988, p. 32) states that,

Armed citizens, intent on protecting their homes and businesses, don’t expect a detective to look scroungy and dirty, to be dressed in old jeans and Budweiser T-shirts, nor to be carrying a belly that belongs in a Santa Claus suit. When they see such a person with a drawn gun, frightened citizens are likely (understandably) to draw the wrong conclusion. (As cited in Gellar and Scott, 1992, p. 166)

Whether for the sake of officer and/or civilian safety, these results have raised questions about policies with respect to off duty officers carrying their weapons.

Another aspect of interest is that of the roles within a police service to which an officer is assigned and its implications for the use of deadly force. The issues outlined above with respect to an officer who is off duty may also be applied to circumstances wherein an officer is assigned to plain-clothes duties. Similar risks are associated with

² Savage and Ault (1985) state that, “it might be noted that no police department in Canada requires officers to be armed while off duty. The common practice seems to be for officers to leave their service weapons at the station when not on duty” (p. 98). It should be noted that the policy as outlined by Savage and Ault has been amended nationally such that officers are restricted from carrying firearms when off duty.

plain clothed officers as with off duty officers. The major difference between the two is that the plain clothed officer will likely engage in deadly force within the context of performing actual law enforcement related duties. It is interesting to note, however, that regardless of the risks associated with plain-clothes duties, “most officers who used their weapons were assigned at the time to their police department’s most populous units, the patrol division” (Gellar and Scott, 1992, p. 167). These same authors provide a cautionary note, however, as they observed that when one takes into account the relative size, that is the number of officers assigned to the particular unit, that “officers in tactical squads in some agencies, are considerably more likely than patrol officers to become involved as shooters and victims” (p. 167). However, Stansfield (1996) provides evidence to the contrary. He notes that although, “one might expect that, because of the dangerous nature of their assignments, tactical police would use *more* force when resolving conflict than their non-tactical counterparts ... the evidence is far from clear, it appears that the *opposite* is true” (p. 115). Using data from the Ontario Police Commission from 1984-1988, Stansfield revealed that in only seven of the 2620 incidents responded to by tactical units resulted in the civilian being shot. As a possible explanation for this he suggests that tactical units, given their specialized training in situation management and additional weaponry, etc. resolve conflict more effectively; that is, “typically, tactical police have more control of their interactions with civilians than non-tactical police” (Ibid, p. 116).

The idea of tactical efficiency and effectiveness has been put forward by other researchers. Returning to the quote at the beginning of this review, the question that arises is, could something different have been done to prevent the incident from progressing to a deadly result? At this point, it is important to note that in some circumstances, the shooting of a civilian is inevitable. Nevertheless, researchers such as Abraham et al. (1981) raise a very critical voice with regard to police tactics. He states that although, “the bulk of the Toronto cases, in fact, were confrontation situations of clear legal justification ... each case also raises to some extent the question of police tactics and training for armed operations” (p. 213). Stansfield (1996) echoes this sentiment. The results of his research (discussed above, and with his own recognition requiring additional research for confirmation) indicates that “police services possess the skills needed to resolve many conflicts non-violently but use them selectively, thus leaving the overall impression that non-violent conflict resolution is a relatively low priority for police” (Stansfield, 1996, p. 116). Abraham et al. (1981, p. 234) observed that “there is a pervasive air of ‘let’s get out there and sort out the situation,’ a belief that the only form of action is confrontation.” This approach has been observed by Best and Quigley (2003) as doomed to fail. Their research in England found that “the use of tactics designed to bring about an early resolution of incidents may have increased the likelihood of a police weapon being discharged as well as the likelihood of errors being made” (p. 350). Their research suggests that a key aspect of avoiding a deadly force resolution is proper management of the situation in the field (See below for a more detailed discussion of the processes).

Addressing both the concern for officer safety and the avoidance of deadly encounters between citizens and the police, the question of one-versus two-officer units and/or assisted versus unassisted officers as well as the number of attending officers to a given event is also of interest. Gellar and Scott (1992) stated that, “there is both anecdotal and numerical evidence to support [the] view that ... officers are in greater jeopardy of

being hurt or killed in the line of duty when working in one-officer units than in two- or multiple officer-units” (p. 169). Furthermore, as noted by Dror (2007), “the crucial element in determining an action is not regulation, but how one perceives, interprets and evaluates the situation” (p. 265). Griffiths (2008) alludes to Dror’s observations as he notes that the presence of a partner or additional officers more generally, is likely to have an impact on the individual officer’s perception as to how dangerous the situation is. He stated that “shootings are more likely to occur when at least two officers are present ... suggest[ing] that police officers who act alone may be more cautious and more reluctant to use lethal force” (Ibid, p. 205). Lending support to Griffith’s (2008) observation as well as previous research conducted by Worden (1995) and Garner et al. (1996), Terrill and Mastroski (2002) reported that “encounters involving Indianapolis officers, an increased number of officers on the scene ... [was] significantly more likely to involve higher levels of force” (p. 239). However, this specific set of research did not speculate on the question of officer caution in varying situations. Congruent with Griffith’s analysis, Gellar and Scott (1992) stated that, “experience suggests that rigorous analysis in most cities will show that conscientious officers in single-officer units *do* aggressively engage problems – but do so in ways that minimize the necessity for the use of force” (p. 174). The analysis and findings of Best and Quigley (2003) may be of some probative value when addressing this question. As noted above, management of the situation may potentially assuage the issue of lone- versus multiple-officer questions.

Within the realm of situational factors, the following section addresses two avenues of research that have dominated the efforts to understand specific situational factors, place and time.

Place and Time Analysis

The recognition that situational factors are significant in explaining instances of use of deadly force by police is widespread. However, comparatively few serious studies designed to refine our understanding of this general proposition have been carried out. Nonetheless, two situational factors have received at least a comparatively greater share of attention: place and time.

The studies in this area all come, either explicitly or implicitly, with the two usual caveats: first, the results in the under-lying studies emerge from specific cases or groups of cases, and thus may not have universal validity; and second, the very complicated nature of police use of force means that place and time can only be identified as possible factors in any instance of police use of force.

Where

The foundational study is by Kania and Mackey (1977), which built on the more general observation of Wilson (1968) that police behaviour could be explained to a significant degree in terms of community characteristics. Using data derived from all fifty American states, Kania and Mackey found that police develop “an intimate knowledge of the real behavior of the community in which [they] serve” (p. 46). In response to this behaviour, an officer will in turn develop an “on-the-job demeanor in direct response to what he observes.” As a result,

When he works in a community in which the resort to violence is a common, appropriate, or functional response to conflict and tension, the police officer will be more inclined to use violence in pursuit of legitimate ends. This development may take the form of an internalized value system, or may be represented as a peer-group normative system ...

This understanding has since been carried further, most significantly by Fyfe (1980). His study, based on an analysis of all reported shootings by New York police officers, found a positive correlation between, on the one hand, a violent crime area with high rates of murder and manslaughter, and, on the other hand, police shootings. Exactly why this should be so was left to some extent an open question, since alternate hypotheses have been suggested – such as that increased numbers of murders and homicides in a particular area are the result of police shootings, or that both respond to a third, unknown factor – though Fyfe himself accepts the explanation suggested by Kania and Mackey. The possibility that additional stress, associated with policing a violent crime area, might be a causal factor is at least plausible. (See also Terrill and Reisig, 2003.)

A significant advance on this understanding came with the study of Crawford and Burns (2008) (building on their 1998 study), which was based on information gathered in five American cities and one county. The study had a large focus – the entire spectrum of force that the police might use, especially when making arrests – but separate findings were stated for use of deadly force: “Deadly force was also more commonly used during arrest incidents taking place in a location known to be hazardous and incidents occurring inside a suspect’s house” (p. 329). In fact, deadly force was twice as likely to be used if an arrest took place inside a suspect’s house, though somewhat counter-intuitively, this study found that time (i. e. night) was not a significant factor.

Another American study that addressed the question of location is Terrill and Reisig (2003), which was in agreement with “Werthman and Piliavin’s (1967) ecological contamination hypothesis.” Terrill and Reisig commented that:

We find that officers are significantly more likely to use higher levels of force when encountering criminal suspects in high-crime areas and neighborhoods with high levels of concentrated disadvantage independent of suspect behavior and other statistical controls.

A South African study by Bruce (2006) (following Fyfe, 1986) adds what may be an important refinement, and addresses the presence (or not) of spectators, noting that when other people are present this may make the police wish to appear more humane, and the suspect to show more bravado; factors which are reversed when there are no spectators.

Also interesting is Waldren (2007), who notes that in England gun crime is very regionalized across the entire country, not just within cities, with the bulk of gun crime “occurring in just three police areas – the Metropolitan Police, Greater Manchester and the West Midlands” (p. 213). This has obvious relevance to the use of deadly force by police in England.

When

Time has also been identified as a possible, or probable, factor in police use of deadly force, and it is well established that most violent incidents happen in the evening or early hours of the night (8 PM – 2 AM). However, very little has been done to flesh out our understanding of the role played by time.

Crawford and Burns (2008) noted that in their particular data set it did not seem to be significant that an arrest might be made on the weekend, rather than during the week (p. 332). But many other questions remain. For example, does seasonality enter into the equation, and, if so, how? This has not so far been researched. Another question that has been raised but not examined is the question of how long the officer has been at work, and whether the shift is nearing its end. In a study published in 2004, for example, David Wood, Executive director of the Police Ombudsman's Office in England, wrote that he had found, "that officers, on occasion, had worked excessive hours prior to being involved in armed operations, which presents obvious dangers" (p. 60). It would be very useful to be able to delineate precisely what those "obvious dangers" are, and how great they are, but on the basis of the literature currently in print that is simply not possible.

Organizational and Systemic Factors

Very early on, some researchers who were interested in police use of force, and, especially, in the use of deadly force, turned their focus from individuals – from individual police officers and individual suspects – to policing organizations. Their attempts to identify organizational factors which might be implicated in police use of deadly force have highlighted a number of factors which (may) play a role in the use of force incidents.

Police Services and Police Forces

The scholars who have addressed questions about the essential nature of police organizations have all done so from a perspective that accepts the essential role of policing in liberal democracies. However, from that point of departure a number of very critical assessments of police organizations have resulted; not with the intent of suggesting that police organizations ought to be done away with, but to suggest ways in which they can be improved. A fundamental contribution to this area of research was *Varieties of Police Behavior* (J. Q. Wilson, 1968) which identified three broad styles of policing in the United States: the watchman style, in which police act "as if order maintenance rather than law enforcement were their principle function" (p. 140ff); the legalistic style, which "induces [police] to handle commonplace situations as if they were matters of law enforcement rather than order maintenance" (p. 172ff); and the service style, which is a mix of the two, and is, not coincidentally, the most desirable (p. 200ff).

These terms are commonly used in the literature, and it has been commonly accepted since Wilson's study first appeared that styles of policing are determined from the "top down": i. e. that it is senior police administrators and policy makers that decide which style of policing a particular organization will adopt.

The "style" that is inculcated in a particular police organization is, thus, changeable, and this is important because there is research showing that some changes result in a decrease in police shootings. Waegel (1984) identifies two such areas, "changes in an administrative climate of tolerance or in the friendly nature of internal

review procedures result in reductions in the number of police shootings” (p. 154). However, it has become clear that making changes is far from easy, as demonstrated by the experience in New South Wales, where even a change in name met resistance: the N. S. W. Police Force underwent a period of crisis and had its name changed to the N. S. W. Police Service, only to revert to a Police Force a few years later (Baker, 2009). Hodgson (2001) has been the most critical of organizational structures, writing that: “public police institutions in Canada and the USA, for the most part, continue to utilize a nineteenth century designed military authoritarian organizational model” (p. 522). He supports the findings of the 1978 Police Research Forum, and observed that:

The critical examination of public police organizational practices and policies must prove to develop and foster an organizational structure that embraces an early twenty-first century management and leadership philosophy and an organizational structure that does not rely on paramilitary tradition and ideology, and therefore reduce the reliance on violent practices, procedures and policies in administering the criminal justice system. (Ibid, p. 542)

This, again, is a top-down approach, and is easier to advocate than to design or implement.

Attitudes and Culture

The nature and significance of what may be termed “police culture” has been addressed in numerous studies, and it plays out in three ways that affect the use of deadly force. First, police culture can prompt police to be assertive in the performance of duties; something that may result in greater danger to suspects, but also to officers and the public at large. Baker (2009, p. 143) quoted the Victoria state coroner, who “criticised a ‘police ethic and culture of public duty requiring courage in physical exposure to personal risk’.” This leads them, Baker wrote, to risk their lives, because of “an attitude that they could, and should, resolve any potentially violent situation and do so immediately” (Ibid). This sense that police often fail to consider other, more measured approaches to incidents is a constant refrain in the literature.

Second, police culture encourages officers to use the threat of force too frequently, and often at the beginning of an encounter with a member of the public. Police have a unique right to use force lawfully – and need to have that right – but it may be exercised inappropriately. In particular, if a threat of force, or minor use of force, meets resistance, it becomes extremely difficult to avoid an escalation that has the potential to result in the use of deadly force.

And third, there is the tendency for police to see society in terms of us and them, especially since so many of the people with whom they must deal are not part of civil society. This can contribute to a sense that the police are isolated, that they are the only ones who really understand society’s problem, and that it is up to them to take care of things. This is reinforced by a sense, frequently voiced by police, that the other parts of the justice system are unreliable at best, and at worst are part of the problem. One result of this is the “blue wall of silence”: that solidarity among officers that means that no officer will provide information that might incriminate another officer, even in situations where deadly force has been used. And, if such uses of deadly force are not examined,

the result is something very much like tacit approval for this method of “fixing the problem.”

Outputs Reasoning

The goal of policing may be defined as something such as “safe communities, that are seen to be safe by citizens”. However, the most frequently announced measure of success is the amount of crime that has been in some manner “solved”. This focus on outputs is understandable, both because while it is difficult to measure safety and perceptions of safety, it is comparatively easy to measure numbers of cases solved, and because it provides a means for acquiring the approbation of legislators and the public, and, not least important, funding (Coleman, 2006). A result of this focus on arrests and convictions is that some police managers are not as diligent as they might be “in managing the use of force by their members” (Bruce, 2006). Bruce, writing for the Centre for the Study of Violence and Reconciliation in South Africa, believes that a key reason for this failure of many managers to be as assertive as they might be in trying to control use of force is that they recognize that “some of the police who are amongst the most motivated and highly productive, and generate the most arrests, are those who ‘push the limits’ of the use of force.” He adds that, “secretly they believe that the manner in which police obtain respect is through physically dominating those who challenge their authority.” These attitudes, and the interest in outputs that underlie them, obviously encourage the use of force, and where identified would need to be addressed from the top down.

Continuum Models

Police in a number of jurisdictions, especially in North America, have adopted (or developed) the “continuum” approach to use of force training. This presents a set of signals that can be used by officers as cues, telling them that it is appropriate to increase their level of force, all the way from strong words to lethal force. Used in this way, continua – there are a number of models in use, though all are variations on a common theme – promise to be useful guides to officers who must respond to changing, and sometimes life-threatening circumstances. However, they have also been targeted by critics, who assert that they can have deleterious effects in practice, both in the field and within police organizations more generally.

In England – where continua are not used – studies have identified the importance of effective incident management in reducing killing by police, and even explicitly rejected the utility of the danger perception approach (i. e. continuum). Best and Quigley (2003),

... the time from police engagement in a firearms incident to the time the shot is fired is effectively the window of opportunity for using less lethal alternatives ... the variance in time to shooting is considerable and the aim of police tactics should be (assuming no increasing risk to officers or members of the public) to extend this safety time window and maximize the opportunity for the use of non-lethal options during this period. The data provided clearly indicate that, in order for this to happen, experience and effective incident management is imperative, with the regression

analysis indicating that this has a greater impact on the timing of the decision to fire than either the perceived contextual risk to the public or the perceived risk characteristics associated with the incident suspect, a finding that is not consistent with a danger perception approach. (pp. 361-362)

In the United States, even more serious concerns have been raised. Albert Reiss (1980) applied sequential decision theory to the analysis of incidents of police use of deadly force, and concluded that:

Although one lacks precise knowledge on the point, there is reason to conclude that unless the source of the threat alters the course of the behavior sequence, the police officer is committed to the use of deadly force once it is defined as a situation possibly requiring the use of deadly force. (p. 129)

This sense that the “source of the threat” may be in control of events – if, indeed, it is proper to say that anyone is in control – once the possibility of deadly force is raised is worrying, and Reiss is only one of many who are concerned that a use of force continuum is an aid to escalating force toward use of deadly force, but not useful in the de-escalation of a confrontation.

A second area of concern is the use to which such continua are put after a fatality has occurred: all too often as a justification for the use of deadly force. This need not be the result of any bad motives, but instead, arises out of the tendency to focus on the circumstances at the moment when the fatal shot was fired, rather than on all of the time leading up to that crucial moment. “The split-second syndrome” (the term is that of Fyfe, 2005)

holds that assessments of the justifiability of police conduct are most appropriately made on the exclusive basis of the perceived exigencies of the moment when a decision had to be taken. So long as a citizen has, intentionally or otherwise, provoked the police at that instant, he, rather than the police, should be viewed as the cause of any resulting injury or damage, no matter how excessive the police reaction and no matter how directly police decisions molded the situation that caused those injuries or damages. (p. 445)

The result of this, as numerous researchers have noted, is that there are few thorough investigations of police use of deadly force – and virtually none in a court of law. Moreover, that those investigations that do occur may not be seen as legitimate, because they are conducted by police, or by those who work closely with police and who need the active cooperation of the police in their work; and finally, that the ultimate effect of dealing with incidents of use of deadly force in this way is to encourage the repetition of the behaviours that led to the use of deadly force.

Reporting and Investigation

Reporting of use of force incidents will inform policy, but also affects practice and reduces incidents of use of force; credible investigations also produce salutary effects. (See “Best Practices” below) The opposite is also true: evidence suggests that if

reporting is not systematic and serious, and if investigations are not credible, incidents of use of force will occur with greater frequency.

Processual Factors

Police-citizen encounters that result in the application of deadly force by police have been described by Binder and Scharf (1980) as a “developmental process.” By this these authors view the police-citizen encounter as a process, “in which successive decisions and behaviors by either the police officer or citizen, or both, make the outcome more or less likely” (p. 111). This so-called processual account of police-citizen interactions have been argued to occur in a series of phases or steps. Binder and Scharf (1980) provided their model for these encounters, it included: (1) Phase of anticipation, (2) Phase of entry, (3) Phase of information exchange, and (4) Phase of final decision. In each of the phases decisions are made by both the officer and the citizen, based on both “intellectual and emotional factors” (p. 118) that impact the behaviours that follow. This approach emphasizes the crucial element of prior decision-making on the final outcome of the situation. Furthermore, the accuracy of the information that the officer obtains throughout the process is critical in determining the appropriate resolution to the situation. From this perspective, “a police ‘decision’ to use, or not to use, deadly force in a given context might be better described as contingent sequence of decisions and resulting behaviors – each increasing or decreasing the probability of an eventual use of deadly force” (p. 116). Advancing from this perspective is the concept of sequential decision making and its impact on the police decision to use deadly force. An additional question arises as to what factors will be present that can have an effect on the sequence of decisions. As noted by Reiss (1980), “the question becomes one of ways to intervene in decision making or in a sequence of choices about how to act as a member of the organization to avert harm or reduce substantially that it will occur in a behavior sequence” (p. 123).

Reiss (1980) noted in his research into how incidents of deadly force encounters that the “analysis of encounters between the police and citizens in which deadly force is used carry hidden assumptions that the officers in the situations had no choice about how they might restructure the encounter or how they might organize themselves in it” (p. 132). In assessing the encounters Reiss incorporated decision theory into his analysis that challenges this oft-held assumption, especially in the context of the “split-second” shooting decision. He stated that the underlying framework of decision theory, and more specifically, the idea of decision theory that decisions are the result of “sequential choice models [that] focuses both upon the options or alternatives attached to each decision and how each decision affects subsequent ones” (pp. 127-128). This suggests that the final decision to shoot or not shoot is the result of a series of decisions that can either narrow or widen the set of alternatives that an officer has available to them. The issue at hand becomes one wherein, “whenever the range of alternatives to decide matters is narrowed, and particularly in the case of deadly force in which they are narrowed to include its possible use, there may be points of commitment or no return so that the chances deadly force will be used will rise substantially” (p. 127). Throughout his examination of the analysts looking into the deadly force encounters Reiss noted that the main problem in the analyses was that “because analysts of police use of deadly force focus on situations

in which the decision was made to use it, ... they ignore all decisions where force gave way to alternative means of coping with situations” (Ibid).

The “starting point” for consideration of the sequential decisions that were made is of great interest. “Typically, the action sequence begins with some alleged offender engaging in threatening behavior, behavior that involves force, or in which there is a distinct possibility that a felon will escape apprehension unless force is used” (p. 128). The problem with the utilization of this starting point is that the analysis of this sequence of events, “determines the choice model that will be applied to the decision and the alternative ways to intervene to avert the use of force” (p. 128). By default, this starting point omits the sequence of decisions that led up to this point and the possibilities at these earlier junctures that might have provided a broader, rather than narrower, set of responses that may have averted the shooting. Based on the tendency for police organizations to use this microbehavioural model in assessing deadly force incidents, “there is reason to conclude that unless the source of the threat alters the course of the behavior sequence, the police officer is committed to the use of deadly force once it is defined as a situation possibly requiring the use of deadly force” (p. 129). As an alternative to the way deadly force situations are conceived of and modeled, Reiss suggests that in order to avert these situations that “one needs to model events or encounters and how the deadly force sequence enters into them rather than to model decisions to use deadly force” (p. 129).

Reiss concluded that the only factor likely to have an impact on the decisions made by the officer in that context is additional information or the behavioural cues of the alleged suspect. This notion is supported by the work of Fridell and Binder (1992) who argued that situational ambiguity and surprise are likely to increase the use of deadly force. However, the organization of the reactive police response to these situations appears to undermine the provision of detailed information to the officer prior to their entrance into the situation as well as information provided back to the organization once the officer is engaged, “so that the course of events might be centrally commanded” (Reiss, 1980, p. 131). As will be discussed briefly below, the idea of a “central command,” or more specifically, police management of these situations is a possible result of this line of inquiry. Prior to engaging in this discussion, a brief look at other possible factors will be introduced.

According to Dror (2007),

The decision to use force is the pinnacle of a complex cognitive process ... [these decisions] involve considering a complex equation of the consequences and probabilities of different alternative actions [*payoff matrix*]. ... [Additionally it], is dependent on decision factors (such as decision complexity and choice of alternatives), *internal factors* (such as emotions and state of mind of the decision maker), and *external factors* (such as time pressure, [social accountability], and context). (pp. 265 - 269)

Additionally, Dror (2007) and other researchers (such as Macdonald, Kaminski, Alpert, and Tennenbaum, 2001) have argued that a significant factor that effects an officer’s decision-making process is their perception of the danger that the event presents both themselves and those under their care. In accordance with danger-perception theory, Macdonald, Kaminski, Alpert, and Tennenbaum (2001) concluded that, “the level of

police use of deadly force is contingent on the danger police officers experience (real or perceived)” (p. 159). This perception of danger impacts the cognitive-based decision-making systems that an officer engages.

Dror (2007) differentiates between two “cognitive systems” that impact the decision-making processes underlying the use of force by police officers. “One system is more ‘cold’ and analytical, logical, and *deliberative*, whereas the other cognitive decision-making system is *experiential*, intuitive, and affect based” (p. 270). In the context of intense police-citizen encounters that present an officer with a high perception of danger, what is clear is that when time is pressing, then the experiential system offers a quick, almost ‘ready-made,’ decision” (p. 270). The advantage of the quick response provided by this system, in the context of police shootings, is mediated by the requirement that to be effective it must be based on expertise. The only way for expertise to be achieved is experience. Dror observed that the primary avenue for getting experience in policing, as in many other professions, is typically on-the job training. However, he argued that training that simulates real-life contexts utilizing modern technology may be of great assistance in providing inexperienced officers with a feel for the real in an environment where the consequences of poor decisions is not catastrophic.

The final aspect of the processual nature to the potentially deadly police-citizen encounter incorporates many of the ideas and findings presented in this section as they relate to the police management of the situation. This topic was introduced previously; however, it appears to warrant further discussion in the context of the findings presented here. Best and Quigley’s (2003) British research, specifically addressed the *police response* as a factor to explain an eventual police shooting. In a very similar vein as the Reiss’ (1980) observations, with respect to sequential decision making and the idea of narrowing or broadening police alternatives, Best and Quigley (2003, p. 350) stated, “where incident managers had a range of options to choose from but selected a ‘proactive’ method that forced a resolution upon incidents, as opposed to attempting to elongate the incident, it was more likely that a shot would be discharged.” Lending some support to the danger-perception theory, the authors did conclude that the perceived risk (both to the officers themselves, and more generally to the public when the event was in a public venue) increased the likelihood for a shooting to occur in a much more rapid time frame. It was further noted that the provision of ballistic protection and the ability of the officers to contain the subject resulted in higher time intervals before shots were fired (keeping in mind that all of the incidents in their research did eventually result in a shooting incident, a problem previously noted with research in this area). Ballistic protection and suspect containment can be argued to reduce the officers’ perception of danger and therefore decrease the likelihood of a shooting.

As noted earlier by Reiss (1980) on-scene management was thought to be crucial in lowering the chances of a shooting incident taking place. This finding was supported in the research by Best and Quigley (2003). In the British system, given that the patrol officer is not typically armed, there are both “bronze” (an on-scene incident manager) and “silver”/“gold” (individuals responsible for creating tactical plans for pre-planned armed response) commanders, as well as tactical advisors. The authors reported that “police officers were more likely to fire rapidly when there was no bronze commander present taking control of the situation ... this finding was replicated for the presence of a tactical advisor” (p. 357). These observations additionally suggest that, when the situation

permits, an officer who can *contain* a subject in such a manner as to reduce the risk and thereby allow for a tactically managed coordinated response is likely to reduce a police-shooting incident. Recognizing the importance that situational factors may contribute to the resolution of an incident Best and Quigley argued that the most significant factor impacting the resolution of these incidents is police management of the situation.

The conclusion is clear: where police managers are unable to impose a tactical structure and management on firearms officers in spontaneous incidents, and where the officers themselves have to make tactical decisions, risk is increased and the onset time to use of deadly force is significantly reduced, thereby reducing the possibility of utilizing alternative resolution strategies. (2003, p. 363)

Reflecting on the materials presented in the overall section of the factors relating to police use of deadly force, the next section will seek to provide some insight into best practices that have arisen from the literature.

Best Practices Applied to Reduce the Use of Firearms by Police

Researchers have made a large number of suggestions about areas that may be addressed in order to minimize police use of deadly force. These can usefully be considered under separate headings. The literature examined provided inconsistent findings with respect to some of the factors hypothesized to be related to the use of deadly force (or force in general) by officers. The conclusions of studies that have been superseded by subsequent research – usually as a result of the subsequent application of multivariate analysis to data sets (see especially Riksheim and Chermak, 1993) – have been omitted. It should be noted that what follows is to a large extent synthesized from the literature, rather than being drawn exclusively from individual sources.

Hiring

The challenge here is two-fold: to avoid hiring undesirable officers and to hire desirable officers. Though this is easier said than done, some important characteristics of each group have been identified. For example, it is recognized that a comparatively small number of officers are involved in a very disproportionately large number of incidence of police use of deadly force (Toch, 1996, Alpert and MacDonald, 2001, Geller and Toch, 1996); it has been suggested that it would be desirable to screen such officers out at the hiring stage, though it is not clear precisely how this could be done (Geller and Toch, 1996). On the other hand, officers with a commitment to the rule of law, who show flexibility in reasoning, and who reflect the communities they serve may be less likely to use deadly force inappropriately (Geller and Toch, 1996, Barker, 1982). It is suggested that these things could be targeted during pre-hiring screening.

Training

Police training is identified as an important stage where efforts can usefully be made to decrease the incidence of police use of deadly force. Studies have shown that training designed to address known problems can be effective, especially with frequent

and regular follow-up (Correll et al., 2007, for the example of training neutralizing the harmful effects of racist; other areas where there has been success include arrests and “domestics”). In addition, training should present alternative courses of action, and focus to a greater degree on early stages of encounters that might culminate in the need to use deadly force; it is often possible to follow a path that will lead to a different outcome (Terrill, 2005). Scenario training is very useful here, and erodes the tendency to see each incident as entirely *sui generis* (Chappell and Graham, 1985, see also Bennell et al., 2007 for possible benefits of the use of simulators); this also helps in avoiding a path that leads to the use of deadly force.

The quality of trainers is crucial: they should be the best and most successful officers, and they should be involved in the investigation of use of force incidents in order to be able better to design their training courses (Marshall and Shuey, n.d.).

Equipment

The question of police equipment has been addressed by many researchers. There are those who advocate that police be unarmed in the normal course of duty, noting, for example, that unarmed police in Britain are both less likely to kill someone or to be killed than police in Canada, let alone the United States, and that recourse as needed to Authorized Firearms Officers and Armed Response Vehicles was sufficient even during the days of “The Troubles” (the term used to refer to the period of violence in Northern Ireland between 1963 and 1985 (1998)). However, few Canadian researchers have advocated this, noting in particular that past experience and American influence renders it impractical. Rather, concern in Canada had an early focus on a perceived inadequacy of the standard issue. 38 calibre revolver and the standard round; this has now been replaced by a concern with the very great effectiveness of police firepower (see also Sarre, 1996 for concern about the present use of rounds in Australia designed to kill rather than incapacitate): interestingly, this is not so much because of the number of rounds and type of load in current police firearms but because of the policy of targeting the centre of body mass. However, whether it is practical to advise officers who are in the midst of often-chaotic and rapidly developing crises to attempt to fire non-lethal shots appears doubtful, though it has been discussed.

Virtually none of the research on police use of force has addressed the question of protective clothing and equipment for police officers, despite the fact that this must change the dynamics of confrontations.

Considerable attention has also been paid to a variety of other “less lethal” options available to police. This has included study of such things as various gases, baton guns (i. e. guns that fire “bean bags”), and devices such as the taser, which have already had wide use, and speculation about a range of other possible tools, such as glues, immobilizing foams, frictionless lubricants, lasers, stun grenades, remote sensing equipment, and the like. None of these has yet produced an option to the gun, and none has obviated the need for the gun. Indeed, serious concerns with sensory and cognitive overload (Bennell et al., 2007) lead one to question the utility of equipping police with too great a range of tools (Burrows, 2007). Some of these – gas and tasers, for example, (Kleinig, 2007) – have already been seen to be used too often and sometimes inappropriately.

Whatever equipment police may use, it is recognized in the literature that “adequate” training is essential, and that there needs to be clear policy outlining what use is to be made of the new equipment.

Police Service

Research has made it clear that there are ways in which change at the level of the individual police service can lead to a reduction in police use of force (Riksheim and Chermak, 1993, p. 376). One is to bring about change in the culture of the officers themselves. Some aspects of police culture – often strongly reinforced by news and entertainment media – serve to create officers who accept violence as a normal part of police work, who see violence or the threat of violence as a preferred strategy for dealing with the public, and who view society, or at least segments of it, as meriting rough treatment. Changing this is not easy, but doing so will produce beneficial results. It can begin with as little as disapproving the use of derogatory terms sometimes used to refer to particular segments of the population, since action sometimes follows vocabulary.

A second change that has been identified as leading to a reduction in police use of force concerns the reporting of incidents of use of force. If all incidents of use of force are routinely and thoroughly reported, the reports are then used in analysis and policy formation, and if senior officers are involved at all stages, improvements quickly follow (Alpert and MacDonald, 2001).

A third suggestion is to integrate approval for non-use of force into the reward system of the service: i. e. have recognition comparable to that usually reserved for heroic action that does involve use of force – medals, commendations and career progress – for officers who have managed to deal with a particularly difficult situation without the use of force. (Alpert and MacDonald, 2001 suggest that merely requiring the careful reporting of use of force incidents will lead to less use of force.)

Administration and Government

Clear policies with respect to the circumstances under which police may or may not resort to the use of deadly force are essential. This is something that should involve both government and the senior-most administration of police services. It is preferable, in this regard, to provide that deadly force may be used only in certain, clearly explained circumstances, rather than the reverse approach of restricting a general right to use deadly force: there are problems with the excessively broad, and neither very clear nor current, empowerment under the common law, which was developed at a time when the death penalty was prescribed for any felony.

It is desirable that provisions be made for regular and credible review of use of deadly force incidents. This will, of necessity, mean external review, and to be most beneficial should involve an investigation of not just the fatality, but also precursor incidents (i. e. incidents which had the same elements but which did not result in a fatality) (Wood, 2004).

Recommendations for Future Research

The review of the previous research has presented a number of possible avenues for research to be undertaken within the Saskatchewan context. As noted previously, there may be research included in the above review that provides overall context to the discussion of the subject matter in general but may not have a direct application within the Saskatchewan context for any number of reasons. For example, some of the research originating in the UK that investigated circumstances involving specialised units may have limited relevance to the current context as all officers in Saskatchewan are armed and, therefore, policies with respect to armed officers attending a scene will vary considerably as the majority of officers in the UK are not in possession of a firearm upon initial entry into a situation. The following provide a brief overview of four possible research projects that draw from the above literature that has relevance to the local context. It has become clear from the research discussed above that there is a need to incorporate multivariate analysis to effectively assess the relevance of any given factor identified as potentially contributing to the use of deadly force. Additionally, the research suggests that future research interested in the application of deadly force account for variations of force options available to officers. It should be noted that the following recommendations are limited by virtue of the limited awareness of authors of this literature review as to what data sources are available at the current time within the Saskatchewan context.

1. Trend Analysis of deadly force incidents across Canada

The analysis of the trends comparing the incidents involving the use of deadly force by officers from different provincial jurisdictions in Canada may assist in initial determining the existence of an issue within the Saskatchewan context. In order to contextualize the results the number of incidents of police-citizen encounters resulting in deadly force will be compared to other indicators noted in the literature above. Specifically, there has been recognition that the use of deadly force may be related to the amount of violent crimes in a given jurisdiction that police are required to respond. As such, one might expect that regions with higher incidences of violent crime may also have higher incidence of police shootings.

The process of conducting this research has already begun. However, there has been limited success in obtaining the data required to make such comparisons. A separate summary of the progress on this particular research avenue will be provided.

2. A review of the independent investigations undertaken by the province of Saskatchewan into officer-involved shootings in Saskatchewan

The review could consist of a number of areas of inquiry including, but not limited to, the following:

- A. A focus group could be conducted with police experts in Saskatchewan to review the information discussed in this literature review to determine the relevance of various factors to the Saskatchewan context

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- 1) It is essential to consider the context in which the analysis of the data is going to take place. It will be important for the researchers to undertake a focus group with local experts in the Saskatchewan policing world to analyze the factors outlined in the literature with respect to their relevance to the Saskatchewan context.
 - 2) This would be the essential first stage of this proposed research. It would be the basis upon which the analysis of the actual case files would proceed.
- B. Investigating any possible commonalities across the cases regarding factors outlined in the literature: Content Analysis
- 1) Based on the information garnered in Part A of this proposed research a “checklist” can be developed and then applied to the analyses of the case files.
 - 2) Each case file can be assessed using the checklist to determine if there are common factors that appear across the cases. If any common factors are identified they can be the focus for additional research as to the impact these factors have on police-involved shootings and how they might best be addressed to reduce the likelihood of their reoccurrence in future.
- C. An investigation into the threats posed to officers in Saskatchewan by suspects/opponents
- 1) The literature has identified opponent characteristics as a key variable in determining the use of deadly force by officers.
 - 2) Individual characteristics such as race, age, sex and socio-economic status have previously been found to be of little explanatory value when analyzed as part of a multivariate analysis. The previous research suggests that what appear to be of greater explanatory value are behavioural characteristics of the suspect/opponent.
 - 3) We would suggest that both the individual and behavioural characteristics of the suspect/opponent be considered to provide the basis for a multivariate analysis. As Saskatchewan may provide a unique context it is worthwhile considering all potentially relevant variables.
- D. A comprehensive survey of police officers in Saskatchewan
- 1) As a final component of this proposed research a survey could be developed to get feedback from the wider constituency of police officers in the province.
 - 2) The survey would be created using the data and analysis of the previous parts of the research.

- 3) The survey would request officer feedback with respect to the various factors suggested to be of importance in determining/creating situations wherein the use of deadly force is undertaken. Additionally, it would provide for feedback with respect to possible suggestions for addressing the factors that each individual officer identifies as significant.

3. A review of Coroner's inquests into deadly force incidents in Western Canada

- A. Coroner's inquests, although not mandatory in every province in Canada have been determined to typically follow police-involved shootings that result in the death of a member of the public.
- B. A preliminary look into these sources suggests that actual transcripts of the proceedings would be required as the final reports vary greatly with respect to the amount of information that they provide; and therefore, their usefulness in providing relevant data.
- C. The Coroner proceedings could be analyzed in much the same manner as outlined in the research proposed above.
- D. The possible advantage of this research would be that it expands the geographical profile of the research and can potentially investigate commonalities and differences that exist across provincial jurisdictional lines.

4. An examination of the policies and procedures in Saskatchewan surrounding the use of force by officers

- A. The literature review has suggested that departmental policies may have an impact on the police use of force in general and deadly force in particular.
- B. A review of the array of policies (training, reporting, and investigation) surrounding the use of force for all policing agencies in the province of Saskatchewan would provide the opportunity to look for commonalities and differences in the various agencies.

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