A woman holds up the photo of her son, who fell victim to gun violence in 1993, during a news conference in Los Angeles in May 1999. (© AP/Nick Ut).

A Common Tool:
FIREARMS, VIOLENCE, AND CRIME

6

INTRODUCTION

Highly publicized mass shootings such as the 1999 Columbine High School massacre or the 2002 Washington, DC, sniper attacks tend to generate a skewed picture of firearm-related violence, focusing on extreme personalities in unusual contexts. Yet small arms are misused on a daily basis in many communities around the world, making gun violence too banal and too frequent for the international media to cover it all. To those involved, the effects of everyday gun violence are no less dramatic than they would be in a mass shooting. Innocent people are killed and injured, while fear and perceptions of insecurity often spread through society as a whole.

State agents have used small arms to violate, directly and indirectly, the entire spectrum of human rights, including rights to life, liberty, and security of person (UNECOSOC, 2002). Moreover, a growing human security movement aims to hold states accountable for controlling high levels of armed violence, particularly in the absence of basic measures to promote the safety and security of citizens.[1] Others see armed violence as justification for an individual's right to self-defence, a concept frequently used to legitimize private gun ownership.[2] These diverse interpretations highlight the need for a deeper understanding of the complex relationship between small arms and societal violence, defined here as the use of firearms in crime, suicide, and unintentional shootings.

This chapter considers the following questions:

- How prevalent is non-conflict-related gun violence, globally and regionally?
- Does the accessibility of firearms affect overall levels of violence?
- How do communities experience and react to gun violence?

The debate over the relationship between firearms and violence has, for the most part, remained a North American academic and public policy issue. Most of the relevant data, research methodologies, and findings have emerged from that region, with its distinct cultural and socio-economic characteristics. While acknowledging the valuable insights included in such literature, this chapter brings a global perspective to the debate, drawing both on existing international evidence[3] and new field research.[4]

The first section draws on criminal justice and public health datasets to measure the extent of gun violence at the global and regional levels, relying primarily on rates of firearm use in homicide and suicide. It also establishes gender and age profiles of the victims of gun violence. The second section reviews recent developments in the academic and public policy debate with respect to the use of small arms in violence. It offers an overview of recent studies assessing the impact of gun availability on violence and crime levels, and discusses the economic costs incurred by gun misuse. The main findings of field research conducted in African communities and other local contexts are presented in the third section. Common patterns discussed include the recycling of military weapons in criminal activity, as well

as the emergence of various private responses to cope with high levels of gun violence. The following are among the most important findings:

- At least 200,000 non-conflict-related firearm deaths occur each year, world-wide. These include firearm homicide, firearm suicide, and unintentional shooting deaths.
- Globally, firearms are used in six per cent of suicides and in almost 40 per cent of homicides.
- Firearm homicides are most common in Latin America and the Caribbean, with a rate five times higher than the world average.
- Almost half the world's firearm suicides occur in North America and Western Europe.
- The relationship between firearm accessibility and overall levels of violence is not clear-cut. Guns facilitate violent outcomes but can also deter crime in some contexts.
- Communities confronted with gun violence in Africa and elsewhere often adopt a variety of responses to gain a greater sense of security. These include reliance on formal and informal private security providers, as well as personal (often illegal) gun ownership.

MAPPING THE PROBLEM: GLOBAL AND REGIONAL PATTERNS OF SMALL ARMS USE IN VIOLENCE AND CRIME

It is generally believed that on average half a million people are killed each year with small arms. Among these, 300,000 people are said to die in armed conflicts, and 200,000 in events not attributed to conflict situations (Small Arms Survey, 2001, 2002, 2003). Because they are routinely cited, these estimates need to be regularly re-evaluated.

This section revisits the figure of 200,000 annual, non-conflict-related firearm deaths. These include fatalities recorded as firearm homicides, firearm suicides, unintentional firearm deaths, and firearm deaths of undetermined intent. Deaths that occur in conflict situations will be considered in subsequent editions of the *Small Arms Survey* (see Box 6.1). This section also identifies regional patterns of firearm use in violence and crime, and establishes the gender and age profile of victims.

Reassessing the estimate of 200,000 annual non-conflict-related firearm deaths

Available data confirm that at least 200,000 non-conflict-related firearm deaths occur every year globally.

There is an ongoing debate as to whether 200,000 deaths actually result from firearm-related violence and crime each year.[5] A considerable limitation of this estimate is its reliance on firearm mortality rates for less than 40 countries,[6] which account for only one-sixth of the world's population, and are extrapolated globally (Cukier, 1998; Krause, 1999). Critics argue that the data used in these estimates essentially covers developed countries where firearm availability is arguably the highest. As a result, extrapolating these rates to countries with lower levels of gun ownership is likely to produce an overestimate (Kopel, Gallant, and Eisen, 2003). Here, we present the findings of an estimate that extrapolates on a regional basis (see Appendices 6.1 and 6.2), drawing on data available for 110 countries that account for more than half the world's population (see Appendix 6.3).

The 200,000 estimate, however unsatisfactory the methodology on which it was originally based, appears to mirror figures obtained by the regional approach presented here. Moreover, 200,000 is likely a conservative estimate; as

reported in Appendix 6.1, the available data suggest a minimum of 180,000 annual deaths from firearm homicides and suicides, and an upper threshold of 250,000 deaths if under-reporting and under-recording are taken into account. If we add to these estimates the 18,000 documented unintentional firearm deaths and firearm deaths of undetermined intent (see Table 6.5 in Appendix 6.3), the range increases to 200,000–270,000 annual non-conflict-related firearm deaths. Consequently, it appears that 200,000 represents a conservative estimate of the number of non-conflict-related firearm deaths occurring annually.

Box 6.1 How many die in armed conflict?

In 2001, the *Small Arms Survey* cited the established estimate of 300,000 small arms-related deaths in armed conflict each year. In contrast to the number of non-conflict-related firearm deaths, which our assessment has shown to be reasonable, conflict deaths now show evidence of a decline.

There seems little doubt that the global estimate will be revised downward. A number of studies and databases have already reported recent reductions in armed conflicts around the world (Marshall, 2003; IISS, 2004). Indeed, the *Small Arms Survey 2003* noted a decline in armed conflicts in Sub-Saharan Africa, a region that contributed a disproportionate number of armed conflict deaths in the 1990s, the years that formed the basis of the original global estimate. There is also a trend towards more thorough counting and better sourcing, which is likely to further refine the overall figure.

This reduction is undoubtedly good news, and cause for hope. However, it should be reiterated that conflict-related deaths are only the tip of the iceberg of the human cost linked to the proliferation and misuse of small arms. As the Survey has documented in recent years, the range of attributable effects is much wider than deaths from fighting. There are also the indirect deaths and injuries resulting from increased insecurity during and after armed conflict, elevated disease morbidity, reduced access to health services, and malnutrition, many of which are not included in conflict death tolls. The effects of a reduction in small arms conflict deaths on these wider impacts will be challenging, but important, to determine.

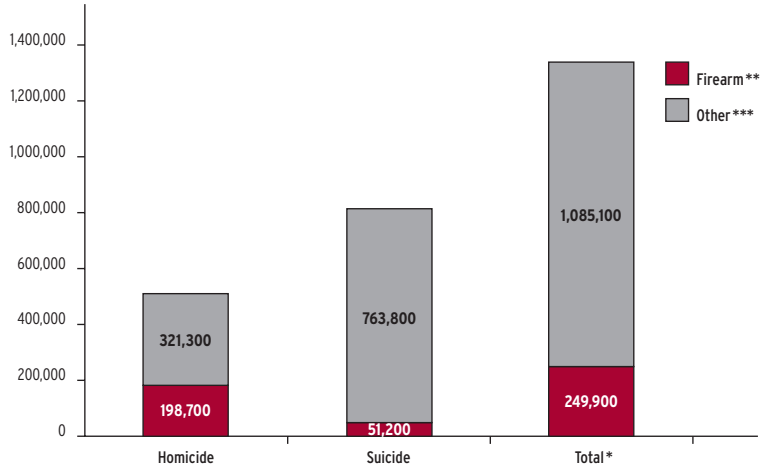
Global and regional patterns of firearm use in homicide and suicide

Globally, suicides outnumber homicides by a ratio of 3 to 2 (WHO, 2002).[7] But the ratio is almost reversed when considering homicides and suicides committed with firearms. At the global level, there are four times as many firearm homicides as firearm suicides (see Appendix 6.1). Firearms are used in approximately six per cent of suicides worldwide and in almost 40 per cent of homicides (see Figure 6.1). At the global level, firearms seem to be primarily a tool for committing homicide rather than suicide.

At the global level, there are four times as many firearm homicides as firearm suicides.

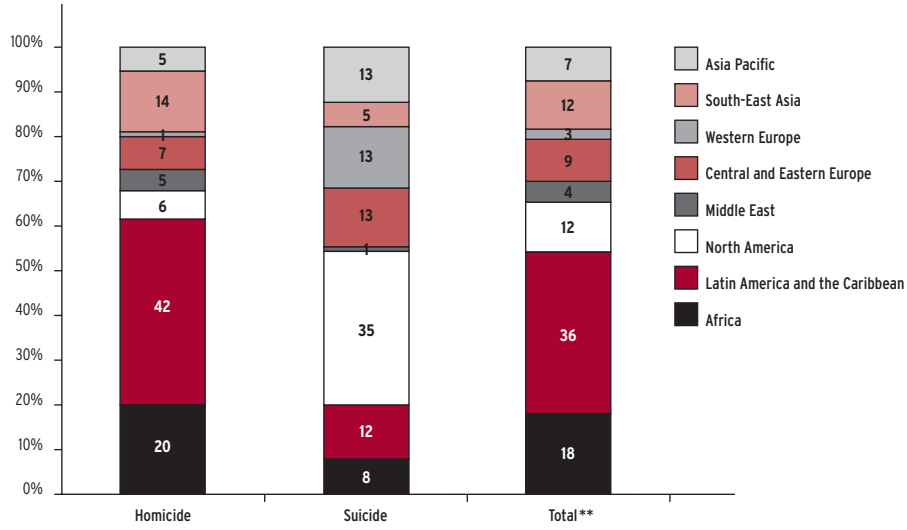
Non-conflict-related firearm deaths vary tremendously from region to region.[8] There appears to be a global annual rate of 2.8 to 4 non-conflict-related firearm deaths per 100,000; firearm deaths (homicide and suicide combined) seem most common in Latin America and the Caribbean. In fact, this region carries 36 per cent of the global burden at an estimated rate of between 13.6 to 16.6 firearm deaths per 100,000. Given the relatively modest number of weapons in circulation in the region (STOCKPILES), this finding contradicts assumptions that extrapolation from 'well-armed' developed countries would lead to an overestimation of the numbers. Second comes Africa, carrying 18 per cent of the global burden with an estimated rate of 4.2 to 6.5 firearm deaths per 100,000. On the lower end, the Middle East, Western Europe, South-East Asia, and the Asia Pacific region all experience firearm mortality rates below two per 100,000.

Figure 6.1: Putting numbers in perspective: Firearms vs. other means of committing homicide and suicide worldwide (number of deaths)



Notes:
* Total = suicides + homicides.
** Firearm homicide and firearm suicide figures taken from Appendix 6.1, using the upper threshold estimates.
*** Homicide and suicide with other means figures derived from WHO overall homicide and suicide estimates (WHO, 2002, pp. 274, 278).

Figure 6.2: Regional distribution of global firearm homicides and suicides (in % of global firearm deaths)*



Notes:
*Percentages calculated based on the upper threshold estimates as presented in Appendix 6.1. Figures may not sum to 100 due to rounding.
** Regional distribution of firearm suicide and firearm homicide combined.

The majority of firearm suicides affect industrialized and developed countries. Indeed, almost half the world's firearm suicides occur in North America and Western Europe (Figure 6.2). Western Europe and North America also stand out as the only two regions where firearm suicides are more prevalent than firearm homicides (Figure 6.3). North America, however, experiences the highest regional firearm suicide rate (more than five per 100,000). At the low end, firearm suicide seems to be a comparatively minor problem in South-East Asia, the Middle East, and the Asia-Pacific regions, all of which have estimated rates below one per 100,000. It is important to note that the potential distortion of reported suicide data in different religious contexts is highlighted repeatedly in the public health literature (Connolly, 1997; Sayil, 1991). For example, in Muslim and Catholic communities, where people fear that family honour, a religious burial, and even a place in heaven could be denied as a result of suicide, sympathetic officials regularly subsume such deaths among other categories, or simply fail to record them. The suicide estimates presented here should therefore be treated with caution.

Firearm suicide levels are the highest in North America and Western Europe.

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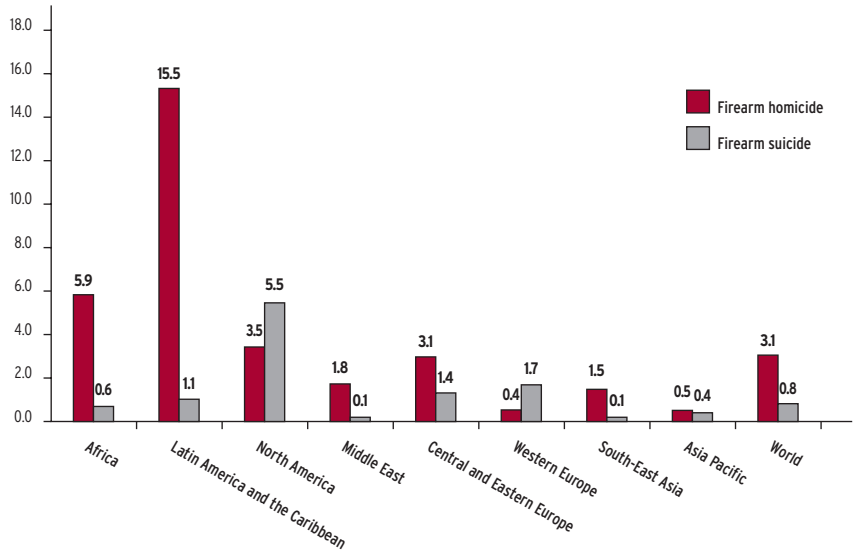
A 13-year-old gang member who has killed five people exhales smoke in Medellin, Colombia, a city known as the most dangerous place in the Western hemisphere.

Firearm homicides appear to be most highly concentrated in Latin America and the Caribbean (40 per cent of estimated global cases) and in Africa (20 per cent). Latin America and the Caribbean also register the highest firearm homicide rate, ranging between 12.8 and 15.5 per 100,000. This largely reflects the high overall homicide rates in the region and the fact that firearms are used in 60 per cent of estimated cases. It is also consistent with findings presented in Table 6.1, which suggest that Latin American urban areas experience the highest rates of assaults, threats, robberies, and sexual offences committed with firearms. Western Europe is last, with only one per cent of estimated global firearm homicides, and the lowest rate per 100,000 (0.3 to 0.4).

Latin America and the Caribbean make up the region most affected by firearm homicide.

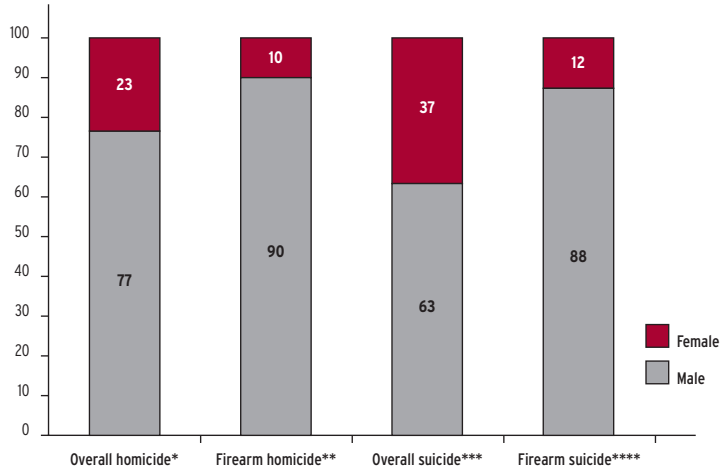
Firearms appear to be more commonly used in homicide than in suicide both globally and across all regions (see Appendix 6.1). In North America and Latin America and the Caribbean, as many as 60 per cent of all homicides are committed with a firearm. At the lower end, it appears that firearms are used in 16 and 20 percent of homicides in the Asia Pacific and Central and Eastern Europe regions, respectively. Firearms are also widely used in North American suicides (50 per cent of all cases). In the Middle East, South-East Asia, and the Asia-Pacific region, less than two per cent of all suicides appear to be committed with firearms.

Figure 6.3: Levels of firearm mortality across regions (per 100,000)*



Note: *Per 100,000 rates reflect the upper threshold estimates as presented in Appendix 6.1.

Figure 6.4: Homicide and suicide victims by gender (% of total cases)



Sources:

* Global homicide estimates taken from WHO (2002, pp. 274–5).

** Calculations on firearms homicide data from WHO (2003) covering a sample of 51 countries, latest year available. Percentages calculated out of a total of 51,180 annual firearm homicides.

*** Global suicide estimates taken from WHO (2002, pp. 278–9).

**** Calculations on firearms suicide data from WHO (2003) covering a sample of 51 countries, latest year available. Percentages calculated out of a total of 22,778 annual firearm suicides.

Demographic profile of victims

Non-conflict-related firearm deaths are an overwhelmingly male phenomenon. The gendered direct effects of firearms have long been studied and trends appear to be consistent across time and space (Small Arms Survey, 2001, p. 213). What is more striking, however, is that the gender imbalance of victims is more marked for firearm deaths than for overall violent deaths. As shown in Figure 6.4, men account for fewer than 80 per cent of overall homicide victims but for more than 90 per cent of firearm homicide victims. Also noteworthy is the fact that men account for fewer than 65 per cent of overall suicide victims but close to 90 per cent of firearm suicide victims. These contrasts suggest that, whereas small arms are a preferred tool for committing violent acts against men, violence against women might involve a wider array of tools and means.

Young men are the primary victims of firearm homicide.

Box 6.2 The use of firearms in non-fatal violent crimes: Preliminary findings from the International Crime Victim Surveys

The United Nations Interregional Crime and Justice Institute (UNICRI) has carried out the *International Crime Victim Surveys* (ICVS) in 75 countries since 1989. ICVS respondents are randomly selected and asked whether they have been victims of 11 types of non-fatal crime in the previous five years. When respondents answer in the affirmative, they are asked more specific questions. For violent crimes (robberies, assaults and threats, and sexual offences), respondents are asked whether the perpetrator used a firearm.[9]

The ICVS allows for international comparisons due to its standardized methodology.[10] As a result of logistical and resource constraints, the surveys are administered nationally in developed countries (n=2,000) and in capital cities among developing countries (n=1,000–1,500). In order to ensure comparability, the victimization rates presented here are for urban areas only.

Table 6.1 illustrates how firearms, at the regional level, appear to be more commonly used in robberies and assaults than in sexual offences. When compared with Appendix 6.1, these findings also show that firearms are a much more common tool for committing homicide than the non-fatal violent crimes discussed here. There are two possible explanations for this finding: First, criminals may prefer using firearms for committing crimes that pose great risks to their personal safety. Second, the use of firearms in violent crime may increase the risk of a fatal outcome; robberies and assaults that turn into a homicide would be recorded as homicide and cannot be reported in victim surveys.

The regional patterns of firearm homicide identified in this chapter also apply to the other types of violent crime discussed here. As with firearm homicides, Latin America and Africa experience the highest rates of firearm robberies and assaults. The lowest victimization rates are experienced in Western Europe and Asia. Latin America and Africa also experience the highest levels of gun use in both robberies (25 and 13 per cent of all cases, respectively) and assaults and threats (nine per cent for both regions). In the 'New World' region, comprised of the United States, Canada, Australia, and New Zealand, seven per cent of robberies and four per cent of assaults are committed with a firearm. At the lower end, small arms appear to be a relatively unpopular tool for committing non-fatal violent crimes in Asia.

Table 6.1 Regional victimization rates (urban areas only)*

Regions**	Robbery			Assaults and threats			Sexual offences***		
	Overall	Firearm	%	Overall	Firearm	%	Overall	Firearm	%
Western Europe	1.45	0.08	5.52	4.02	0.05	1.24	3.10	0.03	0.97
'New World'****	1.24	0.09	7.26	5.84	0.23	3.94	2.50	0.00	0.00
CE Europe	1.81	0.09	4.97	3.20	0.20	6.25	2.02	0.02	0.99
Asia	1.32	0.02	1.52	2.04	0.04	1.96	2.70	0.00	0.00
Africa	4.18	0.54	12.92	5.42	0.48	8.86	5.19	0.11	2.12
Latin America	7.89	1.96	24.84	5.13	0.44	8.58	5.35	0.03	0.56

* Figures represent the percentage of respondents who experienced the stated crime in the five years prior to the surveys (which were conducted between the early 1990s and 2001) . Figures in the % columns represent the percentage of crimes committed with a firearm.

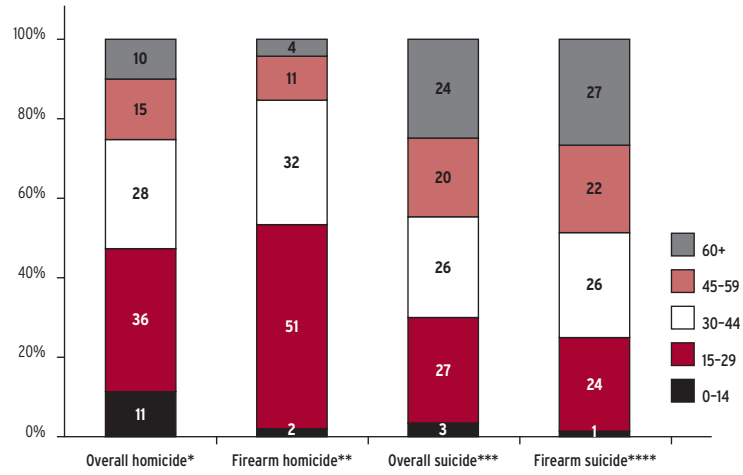
** Regions are defined slightly different from in the rest of the chapter.[11]

*** Only female respondents were asked about sexual offence victimization.

**** The 'New World' is comprised of Australia, Canada, New Zealand, and the United States.

Source: van Kesteren (2003)

Figure 6.5: Homicide and suicide victims by age groups (% of total cases)



Sources
* Global homicide estimates taken from WHO (2002, pp. 274–5).
** Calculations on firearms homicide data from WHO (2003) covering a sample of 49 countries, latest year available. Percentages calculated out of a total of 50,062 annual firearm homicides.
*** Global suicide estimates taken from WHO (2002, pp. 278–9).
**** Calculations on firearms suicide data from WHO (2003) covering a sample of 47 countries, latest year available. Percentages calculated out of a total of 22,603 annual firearm suicides.

There are striking differences with respect to the age of homicide and suicide victims. Figure 6.5 shows that 85 per cent of firearm homicide victims are under the age of 44. In contrast, half of those committing suicide with a firearm appear to be aged 45 or more. As with gender, these patterns are more pronounced for victims of firearm deaths than for victims of overall homicide and suicide. This clearly shows that firearm homicides are concentrated primarily among relatively young, physically strong, and potentially productive individuals. With more than one-quarter of firearm suicide victims aged 60 or more, small arms appear to be a common weapon for committing suicide among the elderly.

BEYOND NUMBERS: THE ROLE OF SMALL ARMS IN VIOLENCE AND CRIME

The debate over gun violence has been most lively in North American academic and public policy circles.

The first section of this chapter established that small arms are a common tool for committing homicide and suicide, although to varying degrees across regions and demographic groups. The fact that small arms are used in violence, however, does not necessarily mean that they cause it or make it worse. This section reviews the existing literature on the implications of the accessibility and misuse of small arms.

A considerable proportion of the research undertaken on the empirical relationships between small arms availability and crime and violence has been produced by North American academics and public policy specialists. Their interest in the issue should come as no surprise, as the region is greatly affected by firearm violence: North America registers the third-highest rate of firearm homicides (3.5 per 100,000) and the highest rate of firearm suicides in the world (5.5 per 100,000).

Box 6.3: Self-defence under international law: Two perspectives.

The right to self-defence is often cited in the US context as a justification for private gun ownership and defensive gun use. This box presents two different, though not necessarily competing, perspectives on the right to self-defence under international law.

The Various Aspects of Self-Defence Under International Law, by Antonio Cassese

The right of self-defence under international law governs relations between states as opposed to groups and individuals. Pursuant to Article 51 of the *Charter of the United Nations and Statute of the International Court of Justice* (UN, 1945) and corresponding customary international law, states have a right to defend themselves against an 'armed attack' if the UN Security Council fails to take effective action to stop it.

Rebels, insurgents, and other organized armed groups do not have a right to use force against governmental authorities, except in three cases. Liberation movements can use force in order to resist the forcible denial of self-determination by (1) a colonial state, (2) an occupying power, or (3) a state refusing a racial group equal access to government. These situations, however, are not considered ones of 'self-defence' under international law.

Individuals who are not organized in groups have even less scope for the use of force under international law. Individuals have no legal right to use force to repel armed violence by oppressive states. This includes governments that commit acts of genocide or other serious human rights violations. Nor does international law grant individuals a right to defend themselves against other individuals. This right is provided for by states in their national legal systems as each state determines the conditions under which individuals can use force for these purposes.

It is not surprising that states have refused to legitimize the resort to armed violence by individuals given the threat this would pose to their own authority. International law is made by states and tends to reflect their interests and concerns. The *Universal Declaration of Human Rights* nevertheless provides a moral endorsement of the violent reaction of individuals to political oppression or other forcible denial of fundamental human rights: 'it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law' (UNGA, 1948, third pream. para., emphasis added).

Individuals' Right to Self-Defence Under International Law, by Don Kates

The right of individuals to defend themselves has been and remains fundamental to international law. In the first instance, this is a matter of simple logic. Nation states are the embodiment of the people living within them. Their right of self-defence, expressed in Article 51 of the UN Charter, can only derive from the right of self-defence held by their people.

This right of individual self-defence was, in fact, a key starting point for international law. Many of the first international law treatises included long discussions of individual self-protection. The right of individual self-defence is also implicit in current international instruments. The right to life, enunciated in the *Universal Declaration of Human Rights* (UNGA, 1948, art. 3), has no substance unless it includes the right to preserve life.

The right to individual self-defence is also accepted by modern philosophers, many of whom also argue that this right entitles individuals to own guns, the only effective means of defence. While pacifist philosophers hold that individuals cannot use force in any circumstances, they also deny this right to nation states. Throughout history, however, the world's major religions—including Christianity, Judaism, and Islam—have equally recognized a right (even a duty) to kill in self-defence.

A universal right of self-defence for individuals has strong practical justification. Police have no legal duty to protect endangered individuals. They deter crime by patrolling and by apprehending perpetrators after crime occurs. The law does not require police to help specific individuals under attack or under a general threat of death. This principle has been upheld by US courts, for example in the case of *Warren v District of Columbia* (US, District of Columbia Court of Appeals, 1981). This, in fact, reflects police resource limitations that apply not only in the United States but also in other industrialized countries with significant levels of violent crime, including Australia, Canada, and England.

Sources: Cassese (2003); Kates (2003)

This section highlights three dimensions of the gun-control debate. The most controversial has to do with the so-called 'accessibility' question: does the availability of firearms increase overall levels of violence and/or does it enhance security through deterrence and defensive gun use? A second theme relates to the 'instrumentality' versus the 'substitution' of firearms. In other words, given their lethality and other attributes, do firearms actually facilitate and create more opportunities for violent outcomes? If small arms were no longer available, would criminals 'substitute' them with other types of weapons? A third perspective has emerged from the fields of economics and criminology, and attempts to measure the net costs imposed on societies affected by high rates of firearm violence.

More guns, more or less violence? The 'accessibility thesis' debate

Proponents of the accessibility thesis argue that when there is ready access to a firearm (handgun, rifle, or shotgun), a violent outcome is more likely.[12] Opponents of this position argue that the availability of firearms deters and therefore reduces violent outcomes. Citizens fearful of violent crime will acquire guns for self-defence (see Box 6.3) and, as a result, gain a greater sense of security. Resolving the accessibility debate requires an understanding of whether increased arms availability increases violence and/or personal security.

Methodological challenges

A number of methodological challenges have prevented the research community from providing clear answers to the accessibility question. One of the key obstacles has been the definition of 'accessibility' itself. Studies have typically advanced three indicators to measure whether weapons are accessible: the percentage of households possessing firearms; the extent to which firearms are regulated; and the number of firearms in civilian hands (Kates and Polsby, 2000).

Each of these measures has limitations. For example, the number of households with a gun does not necessarily reflect people's ability to access firearms they do not own. Furthermore, this type of data is usually collected through voluntary surveys, which are likely to underestimate prevalence given the sensitive nature of the question. Using firearm regulations as indicators of availability is equally problematic: strict firearm laws are often passed as a result of gun availability and violence. Areas with tougher gun legislation may therefore actually have more guns than areas with more flexible laws but lower levels of violence. As for the total number of firearms in civilian hands, it too is controversial as the indicator does not adequately reflect the overall distribution of weapons within a given society (i.e. the number of weapons per gun owner).

One major challenge to resolving the accessibility thesis debate lies in demonstrating a causal link between gun accessibility and violence.

Demonstrating a causal link between gun accessibility and violence is not methodologically straightforward. Where increased firearm availability is accompanied by higher rates of violent death, how can one determine which came first? It is possible in such situations that civilians arm themselves as a response to increasing crime rates. When studies are conducted over a period of time, it is also extremely difficult to determine whether the variations in overall levels of violence are the consequence of reduced arms availability or of developments affecting other plausible factors of violence.[13]

Another major obstacle to resolving the accessibility issue has to do with the availability and reliability of statistical data. As shown in Appendix 6.3, basic aggregate data such as national annual firearm homicide rates are not available for many countries. Even in countries with comparatively sophisticated data collection systems such as the United States, researchers there argue that even more comprehensive data is needed to adequately tackle the issue (Dahl, 2003). This was made clear with the release of findings from the Task Force on Community Preventive Services, which found 'insufficient evidence' to determine the effectiveness of eight different types of firearms legislation (CDC, 2003a).

State of the debate

Notwithstanding these limitations, the literature has produced a number of 'qualified' findings since the issue was last examined in the 2001 *Small Arms Survey*. These fall into three main categories: studies showing that firearm availability among specific population segments increases the likelihood of a violent outcome, research emphasizing the number of crimes that are deterred by responsible gun ownership, and studies seeking to measure the effectiveness of gun control legislation.

The most pertinent studies seeking to establish a relationship between small arms availability and a higher incidence of violence focus on specific age groups (primarily the youth and elderly) and on the gender dimensions of violence (with gun availability posing an increased risk of violence against women). With respect to age groups, Miller *et al.* (2002, p. 273) find that, where there are more guns, children aged 5–14 are much more likely to become victims of lethal violence than to be protected from it. Using the Life Experiences Survey, Slovak (2002) finds that increasing access to guns coupled with lack of parental monitoring heightens the risk of exposure to gun violence. There is also growing evidence that the availability of firearms at home increases the risk of impulsive suicide among youth, especially when combined with other risk factors such as alcohol and drug abuse.[14] In this regard, Kellerman *et al.* (1992) showed that youth under 24 with a firearm in the home are 10.4 times more likely to commit suicide than youth from the same age group whose household does not possess a firearm. In the United States, the elderly, and in particular white men, are also at a higher risk of suicide when they have access to handguns (Conwell *et al.*, 2002). Wiebe (2003a, 2003b) finds that younger and older people, men and women, whites and non-whites are all at an increased risk of violent death if guns are kept at home.

A number of studies suggest that access to guns increases the likelihood that women, youth, and the elderly become victims of violence.

© Reuters/HO

This police photo shows a gunman robbing Barclays Bank in north London in February 2002.

Gender-focused research has also generated revealing findings. A study that compares 25 high-income countries has found that female homicide victimization rates are significantly associated with firearms availability (Hemenway *et al.*, 2002). This correlation is strengthened by the United States, where firearms are used in 59 per cent of all intimate partner homicides of women (US Bureau of Justice Statistics, 2002). Kellermann and Heron (1999), in an examination of firearms and family violence, have shown that women are much more likely to be murdered by a firearm than to be protected by one. This confirms the results of a study by Bailey *et al.* (1997), which shows that women in homes with one or more guns are 7.2 times more likely to be the victim of homicide. The use of firearms in intimate partner violence is becoming an increasingly well-documented issue. Wintemute *et al.* (2003) find that handgun purchase among women in

California is associated with a 50 per cent increase in homicide risk compared with all adult women in California. This increased risk is of intimate partner homicide, not of homicide involving other assailants.

© AP/Nancy Palmieri

College students practice at the Smith and Wesson shooting range in Massachusetts in May 2002.

However, there appears to be little relationship between gun prevalence and general crime, because most crimes do not involve guns (see Box 6.2). For example, it is still unclear whether gun availability increases or prevents burglary and robbery. Gun advocates believe that criminals are deterred by gun ownership in private houses (Kopel, 2001), while others believe that it may increase burglaries because guns are considered valuable loot (Duggan, 2001; Ludwig and Cook, 2003). A number of studies, however, have shown that higher levels of gun ownership appear to be associated with higher rates of robbery with guns, but not of overall robbery (Cook, 1979, 1987; Kleck, 1997).

In the last decade, considerable research has focused on the frequency of legitimate gun use in the United States. Surveys have generated estimates of the annual number of such defensive uses ranging from 64,000 (McDowall and Wiersema, 1994; Cook and Ludwig, 1997) to 2.5 million (Kleck and Gertz, 1995). The true figure of defensive gun use is likely to lie somewhere in between; some have suggested a figure of between 200,000 to 500,000 instances annually (Wintemute *et al.*, 1999, quoting T. Smith, 1997).[15] Supporters of defensive gun use have pointed out that defensive gun use saves lives: guns used against criminals may not necessarily kill the criminal. Even when a criminal is killed, this might have saved more lives if the criminal intended to kill more than one person (Kleck, 1997). Sceptics of defensive gun use contend that victims are seldom able to deploy a gun against intruders even when they have one available (Cook and Ludwig, 2000). They believe that guns are not widely used for defensive purposes in moments when they are needed and that self-reported defensive gun use includes instances of perceived rather than real threat.

Box 6.4: The impact of gun control measures in Australia

Despite reports of a crime wave in Australia following recent restrictions on the private ownership of firearms, evidence actually shows sweeping reductions in gun-related death, injury, and crime.

On 10 May 1996, 12 days after 35 people were shot dead by a single gunman at Port Arthur, Tasmania, Australia's state and federal governments agreed to enact wide-ranging gun control measures. Between June 1996 and August 1998, new restrictions were progressively brought into force. These included the 1996-97 Australian Firearms Buyback, in which 643,726 newly prohibited semi-automatic and pump-action rifles and shotguns were purchased at market value for destruction by the government. Thousands of gun owners also volunteered additional, non-prohibited firearms for free, and more than 700,000 guns were destroyed (Australia, CAGD, 2002; Giles, 2002[16]).

Following the gun buy-back, the number of firearm-related homicides (see Figure 6.6) fell sharply between 1996 and 1999 (Reuter and Mouzos, 2002). By 2001, Australia's rate of 0.25 gun-related homicides per 100,000 population was at its lowest since 1950, having fallen to one-sixteenth that of the United States (ABS, 2001; Arias *et al.*, 2003). Although by 2002 overall homicides (by any method) had risen once again almost to pre-buyback levels, the use of guns in homicide had fallen to its lowest proportion since 1915 (Mouzos, 2003). This suggests a substitution effect to weapons of lower lethality.

In the seven years from 1996 to 2002, total firearm-related deaths from all causes in Australia (homicide, suicide, unintentional shootings, and justifiable homicide) fell from 521 to 299—a reduction of 43 per cent since the new gun laws were introduced and well under half the annual gun death toll that prevailed two decades earlier. As a result, in 2001 the country's overall rate of gun death reached a new low of 1.75 per 100,000 population, or one-sixth that of the United States. In 2002, the Australian rate

dropped once more, to 1.5 per 100,000 (Bell, 2003; ABS, 1998–2003; Research Centre for Injury Studies, 2000; Arias *et al.*, 2003). Similar reductions were reported in non-fatal firearm-related injury (Mouzos, 2001a).

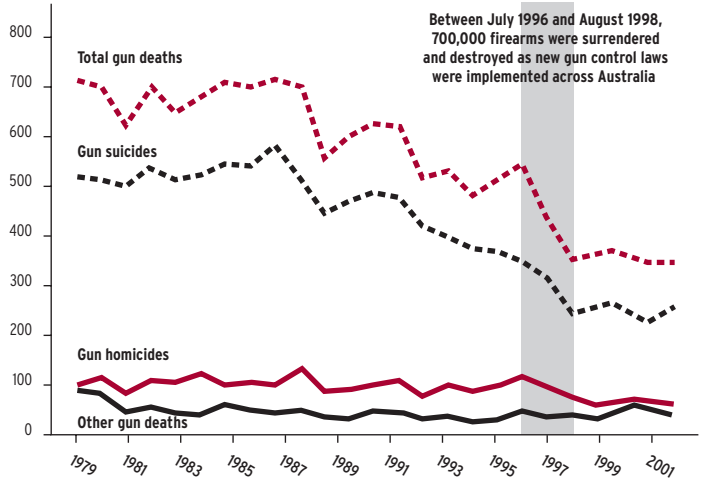
Those who claim that Australia suffered a 'crime wave' following restrictions on private gun ownership often cite as evidence unrelated figures for common assault, sexual assault, or robbery (no weapon), armed robbery (any weapon), unrepresentative regional figures, and short-term spikes. In reality, Australia's robbery victimization rate in 2002 (106 per 100,000 population) was the lowest since 1995 (ABS, 2003b).

In recent years, 94 per cent of robberies in Australia did not involve firearms. When a robber did use a weapon, it was less and less likely to be a gun. In 2002, a ten-year low was reached when only 5.6 per cent of robberies involved a firearm (ABS, 2001, 2003a). By comparison, 41 per cent of robberies in the United States in 2000 involved a gun, usually a handgun (Australian Institute of Criminology, 2002).

Handguns account for half the firearms used to commit homicide in Australia. Between 10 per cent and 27 per cent of the perpetrators of homicide were licensed gun owners (Mouzos, 2001b, 2002a, 2003b). In July 2003, Australian states and territories launched a new initiative to remove potential crime guns from private ownership. The National Handgun Buyback targets readily concealable pistols and revolvers, offering market prices during an amnesty period, followed by prohibition of several hundred models of handgun based on calibre, barrel length, and magazine/shot capacity (Council of Australian Governments, 2003).

The debate over the predominant source of Australian crime guns involves much heat but little evidence. While some claim that firearms used by criminals must be smuggled into Australia (O'Malley, 2003), others cite Customs and Police testimony that crime guns are most often obtained from licensed Australian gun owners (Toohey, 2002; O'Malley, 2003; Australian Customs Service, 2003). An average of 4,200 firearms are reported stolen each year in Australia, with an unknown number unreported. More than 3,500 easily concealed handguns were reported stolen from licensed gun dealers, police stations, security firms, shooting clubs, and private premises in the years 1994–2000 alone (Mouzos, 2002b).

Figure 6.6: Firearm-related deaths in Australia, 1979–2002



Note: 'Other gun deaths' comprises unintentional and legal intervention shootings and gun deaths of undetermined cause.

Sources: Research Centre for Injury Studies (2000); Bell (2003)

In a trend that preceded the Australian Firearms Buyback but seems to have been greatly accelerated by it, private gun ownership fell by 45 per cent between 1989 and 2000, leaving an Australian household three times less likely to own a firearm than a US household (Australian Institute of Criminology, 2002). By destroying one-fifth of their country's estimated stock of firearms–an equivalent figure in the United States would be 40 million (Reuter and Mouzos, 2002)–Australians have chosen to significantly shrink their private arsenal. All remaining guns must now be individually registered to their licensed owners, private firearm

sales are no longer permitted, and each gun purchase through a licensed arms dealer is scrutinized by the police to establish a 'genuine reason' for ownership. Possession of firearms for self-defence is specifically prohibited, and very few civilians are permitted to own handguns. Australia's state governments, police forces, and police unions all support the tightened gun laws, while opinion polls show strong voter approval.

In the ten years to 1996, culminating in the massacre at Port Arthur, Australia saw 11 mass shootings in each of which five or more victims died. In these events alone, 100 people were shot dead and another 52 wounded (Alpers, 1996). In the eight years since Port Arthur and the new gun laws, no mass shootings have occurred. Even among gun homicides, these events are rare, and causality cannot be claimed from such a small sample. Yet Australians have reason to be encouraged by the results of recent measures to curb the proliferation of small arms.

Source: Alpers (2004)

There is a persistent belief in some quarters that the open possession of firearms by civilians can decrease the likelihood of crime occurring. For example, Lott and Mustard (1997) and Lott (1998) contend that permissive laws allowing civilians to carry firearms outside their home (Right-to-Carry or RTC laws) have led to a substantial reduction in violent crime. In their view, if potential victims arm themselves, they are not only better equipped to defend themselves but the deterrent effect is greater as criminals will think twice before attacking a victim who might be carrying a firearm. Duggan (2001) and Kovandzic and Marvell (2003), however, find that there is no credible evidence, statistical or otherwise, that allowing citizens to carry concealed handguns produces greater deterrent effects.[17] Nevertheless, the findings of Lott and Mustard have proven enormously influential: lawmakers in a number of US states have recently passed a series of RTC laws (Donohue, 2003).[18]

Gun control has registered some notable successes in reducing the proportion of crimes committed with firearms.

The effectiveness and efficiency of firearm legislation in reducing overall crime and violence is also still very much an open debate. For example, a recent CDC report presented the findings of the evaluation of eight types of gun-control laws, including: bans on specific firearms or ammunition; restrictions on firearms acquisition; firearm registration and licensing of firearm owners; concealed weapon-carry laws; child-access prevention laws; zero tolerance laws for firearms in schools; and combinations of firearms-regulation legislation. The evaluation found 'insufficient evidence to determine the effectiveness of any of the firearms laws or combinations of laws reviewed on violent outcomes' (CDC, 2003a, pp. 1–2). Even though the report also contains a disclaimer specifying that 'insufficient evidence to determine effectiveness should not be interpreted as evidence of ineffectiveness', this report has been seized upon by anti-gun control advocates who seek to highlight not only the ineffectiveness but also the perceived harmful impacts of gun laws (Wheeler, 2003). There is, however, a growing body of evidence indicating that gun control measures contribute to reducing levels of firearm violence without necessarily affecting overall violence (see Boxes 6.4 and 6.5).

A tool among others? Guns, their instrumentality, and the substitution effect

A debate closely related to the accessibility thesis concerns the instrumentality of firearms versus their substitution effect.[19]

Adherents of the instrumentality theory argue that firearms, because of their specific attributes (e.g. simplicity and lethality), increase the likelihood of serious injury or death. In their view, the availability of guns might increase overall homicide and suicide rates irrespective of the aggressor's motivation. By way of contrast, proponents of the substitution effect argue that if a person intends to kill, the method is irrelevant: if they did not have access to firearms, criminals and those aiming to commit suicide will merely substitute another weapon or means to carry out the act. The overall level of violence would, therefore, remain unaffected by the availability of guns.

Do any attributes of firearms make them different from other means of committing violent acts? It is regularly pointed out that virtually no physical competence is required to deliver violence with a gun. Moreover, a criminal act committed with a gun poses virtually no risk to the perpetrator and can kill at a distance thereby endangering 'all in the vicinity' (Cook and Ludwig, 2000, p. 35). The greater lethality of guns compared with other weapons is comparatively obvious with respect to violent crime (Rennison, 2002). Gun robberies are three times more likely to result in death than robberies committed with knives, and ten times more fatal than robberies in which other weapons are used (Cook, 1987, quoted in Cook and Ludwig, 2000, p. 35). It has also been argued that suicide attempts by gunshots are more likely to be effective than suicide attempts by other means (Zimring, 1991). Studies conducted in the United States and Canada show that suicides committed with firearms have the highest likelihood of a lethal outcome; 90 per cent of suicide attempts with a gun are fatal, compared with around 20 per cent with drug overdoses (see Table 6.2). A more recent study shows even higher firearm lethality and reduced poisoning lethality: 96.5 per cent and 6.5 per cent, respectively (Shenassa, Catlin, and Buka, 2003).

Table 6.2 Lethality of suicide attempts by means

	US* (%)	Canada** (%)
Firearm	90	92
Hanging	80	78
Carbon Monoxide	77	78
Drowning	77	67
Drug overdoses / poisoning	23	23

Sources:
* Kleck (1991), quoted in Mouzos (1999)
** Chapdelaine, Samson, and Kimberly (1991), quoted in Miller and Hemenway (1999)

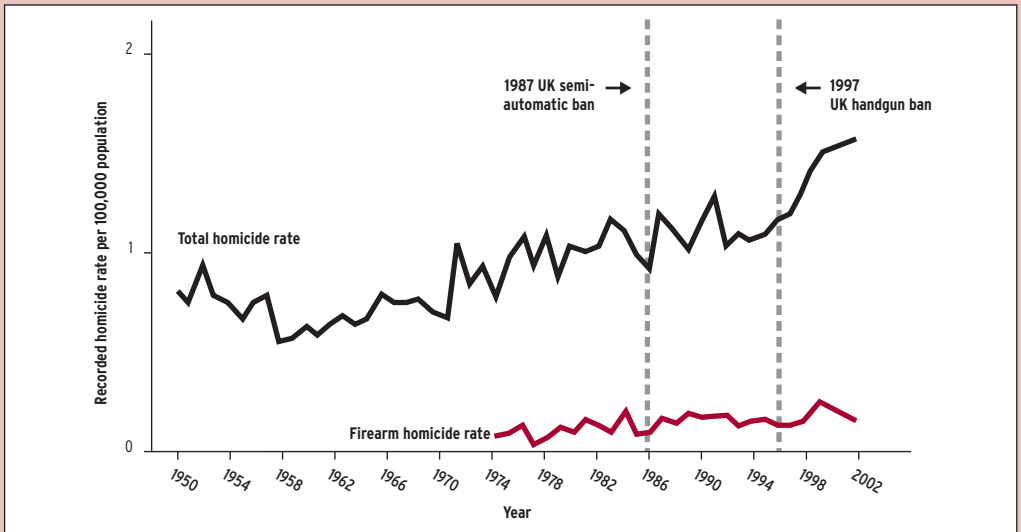
Supporters of the 'substitution effect' interpretation contend that the method is of little significance compared to the intent: the perpetrator will persevere until he or she achieves his or her goal. Though firearms at home appear to increase the risk of suicide among certain age groups, the case for substitution seems to be compelling with respect to suicides. In his exhaustive survey of the literature on the relationship between firearms and suicide, Kleck (1997) finds that, of 13 studies, nine found the aforementioned significant correlation between levels of gun availability and rates of gun suicide, but only one study claimed to find a significant association between the level of gun ownership and the rate of total suicide. This seems further illustrated by the case of Japan, which has an extremely small total stockpile of firearms but a suicide rate similar to that of the United States; in Japan, suicides are almost always accomplished with means other than guns (see Kopel, 1992). A recent study by Killias, van Kesteren, and Rindlisbacher (2001) also shows that, at the cross-national level, gun ownership is associated with the proportion of suicides committed with a firearm; but gun ownership is not found to be correlated with overall suicide rates. In other words, where firearms are available, they are the preferred tool for committing suicide, but do not appear to increase overall rates of suicide within a whole country.

Box 6.5 A handgun ban in the United Kingdom

The 1997 ban on civilian handgun possession in the United Kingdom is a case study in preventing gun violence that is being closely watched by policy-makers and advocates in other countries. But while the law appears to have reduced the number of banned weapons in circulation, its overall effect on gun crime is unclear.

Prior to the ban, England and Wales (grouped together by the Home Office for statistical purposes) already had some of the lowest rates of firearm mortality among the high- and upper-middle income nations of the world, and the lowest of 21 surveyed European countries (Krug, Powell, and Dahlberg, 1998). Since the police began publishing figures for gun homicides in 1977, fewer than 100 fatal shootings have been recorded each year, and the rate has not exceeded 0.18 per 100,000 people (see Figure 6.7).

Figure 6.7: Homicide and firearm homicide in England and Wales



Note: From 1998–2003, crime reporting changed from the calendar year to 1 April–31 March.

Sources: Personal communication, Office of National Statistics (8 August 2003); Home Office (2000a, 2001b, 2002, 2004a)

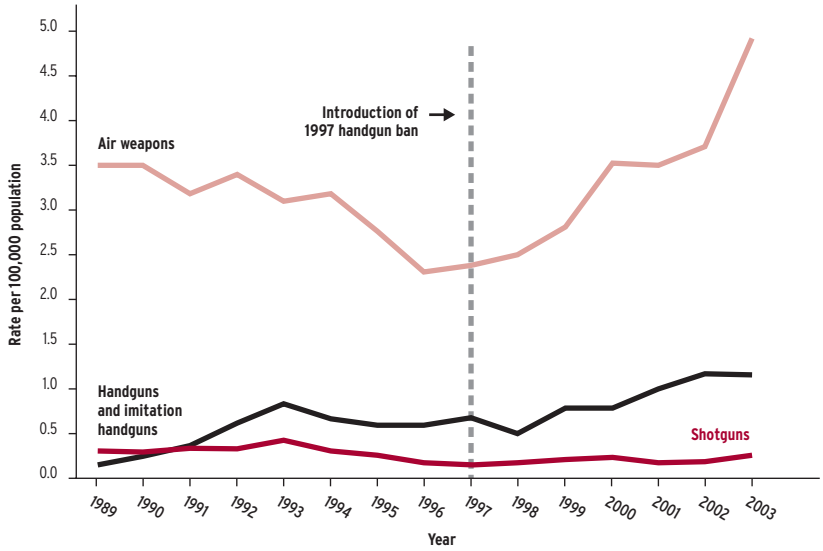
But in a culture unaccustomed to widespread gun violence, sporadic mass shootings have proven deeply disturbing to the public. Two massacres in particular—the 1987 assault weapon and handgun attack that left 18 people dead in Hungerford, England, and the 1996 handgun killing of 16 schoolchildren and their teacher in Dunblane, Scotland—generated a public outcry and calls for gun control policies that led to revisions to the 1968 Firearms Act governing civilian firearm ownership. Since both of these shootings were committed by licensed gun owners with legally acquired weapons, the amendments sought to further limit the kinds of weapons that could be acquired and the people who could own them.

Legislative changes in response to these shootings built on the 1968 Firearm Act's ban on automatic weapons and licensing and 'good reason' requirements for long guns (rifles and shotguns). After the Hungerford incident, all semi-automatic firearms were prohibited, except for .22 calibre semi-automatic long guns. Then, in response to the Dunblane shooting, Parliament in 1997 banned all handguns except for very limited purposes (for example, to slaughter animals or to start races, but not for self-protection). The ban, effective 1 March 1998, did not extend to all hand-held weapons, however. In particular, deactivated handguns, hand-held airguns, and replica weapons were exempted. Amnesty programmes were instituted to remove existing, now illegal handguns from general circulation. The government paid market prices for handguns, accessories, and ammunition. At least 159,701 now illegal handguns have been surrendered in this way since 1998; however, an estimated 250,000 deactivated firearms that can readily be reactivated remain widely available (UK, NCIS, 2003; Muir and Carter, 2003).

As of 2000, the legal handgun ownership rate is 0.02 per 100 persons (UK, Home Office, 2004b). Despite this low level of ownership, Home Office statistics report an increase in the gun homicide rate from 0.09 per 100,000 in 1998 to 0.15 per 100,000 in 2002, while the use of guns in all violent crime increased from 12.8 to 23.3 per 100,000 (UK, Home Office, 2004a).

What kinds of firearms are being used to commit this post-ban violence? Airguns that have not been banned appear to predominate in gun crime, accounting for at least 40 per cent of all gun assaults, and they are over three times more likely than genuine handguns to be used in causing or threatening injury (see Figure 6.8). In 2002, airguns were responsible for 30 per cent of non-fatal serious gun injuries (UK, Home Office, 2004a).

Figure 6.8: Recorded use of guns to injure and threaten in England and Wales, by weapon type



Note: From 1998–2003, crime reporting changed from the calendar year to 1 April–31 March.

Source: Home Office (2000a, 2004a)

The picture is less clear with respect to gun homicides, the majority of which were committed with handguns (49 per cent), then shotguns (17 per cent), rifles (6 per cent), airguns (1 per cent), and unidentified firearms (26 per cent) in 2002 (UK, Home Office, 2004a). The 'handgun' and 'unidentified' categories are likely to contain some, and possibly many, formerly deactivated or replica guns, as there has been a 50 per cent increase in the seizures of converted replicas in the wake of the ban (UK, NCIS, 2003). Since the gun homicide data do not shed light on whether guns were once deactivated or replicas, however, it is difficult to assess the full impact of the ban. Given the low number of gun homicides and the modest fluctuations since the ban, it does not appear to have been statistically significant.

What became increasingly clear to police and government officials in the wake of the ban was that lawful airguns, replicas, and deactivated firearms were still a significant crime problem. This realization led to the inclusion of provisions in the Anti-Social Behaviour Act of 2003 (effective 20 January 2004) that prohibit certain types of convertible airguns commonly used in crime and raise the minimum age for purchase of any airgun from 14 to 17, which is also the minimum age for firearms. These restrictions, if aggressively enforced, will complement the handgun ban by addressing weapons that are far more common in UK crime than genuine firearms.

Source: Howard and LeBrun (2004)

With respect to weapon substitution in violent crime, it is interesting to note how different types of firearms may or may not influence overall levels of violence. In the United States at least, handguns (pistols and revolvers) are the type of firearm most commonly used by criminals (US, Department of the Treasury, 2002, p. 10). Anderson and Kates (2003)

A burglar holds a gun to his head, threatening to commit suicide unless the police provide an escape vehicle in Buenos Aires in June 2003.

argue that, should handguns become unavailable to criminals, the homicide rate would remain steady at least and might even increase, as some professional criminals would switch to knives (roughly equivalent in lethality to small-calibre handguns) or other methods, while others would switch to rifles and shotguns (of greater lethality than handguns). The experience of the United Kingdom, however, shows that one of the outcomes of the 1997 handgun ban has been the increased reliance on airguns, handgun imitations, and replicas (as opposed to shotguns) in violent acts (see Box 6.5).

A conciliatory approach? The economic costs of gun violence

The relationship between small arms availability and overall violence is not a simple one. On the one hand, it is important to acknowledge the valuable and policy-relevant contributions made by the accessibility debate: firearm availability does pose a risk to specific demographic groups such as women, male youth, and the elderly in specific contexts. On the other hand, one cannot ignore the deterrent effects of small arms on crime when they are in the hands of law-abiding citizens. The injection of more resources into research and data collection would undoubtedly generate more focused and policy-relevant findings—especially the identification of population groups most at risk.

These qualified findings must not overshadow the fact that violence is a complex phenomenon that cannot be reduced by focusing on guns alone. A review of the crime prevention literature demonstrates that violence reduction is contingent upon a range of factors, with guns representing only part of the puzzle (Waller, 2003). Blumstein and Wallman (2000), for instance, emphasize that much of the growth in violent crime in the United States from 1970 to 1980 and then the decline to 1985 was due to the 'movement of the baby-boom generation into and then out of the high crime prone age groups' of 15–25. They warn that demographic trends could lead to an increase in crime rates in the next decade.

Violence is a complex phenomenon that cannot be reduced by focusing on guns alone.

Crime prevention and reduction programmes that 'work' do not necessarily target guns exclusively. A recent evaluation of such interventions found only one 'promising' gun-focused programme. This programme involved proactive arrests of individuals carrying concealed weapons in Kansas City's gun-crime hot spots. The evaluation found that gun buy-backs were ineffective and not a single gun-related programme was listed among those that actually successfully reduced crime according to rigorous scientific standards (Sherman *et al.*, 1998, quoted in Waller, 2003).

Whether such programmes work or not, a growing literature indicates that the use of guns in violence is especially problematic because of their disproportionately high social costs in comparison with other types of weapons. As has been reported in previous editions of the *Small Arms Survey* (2001; 2002; 2003), firearm injuries are more costly to public health systems than those occasioned by other types of weapons. In the United States, for instance, it was estimated that the medical treatment for a gunshot injury is on average 12 times more costly than the cost of treating cuts or stab wounds (Miller and Cohen, 1996). Other quantifiable costs incurred by gun violence include lost productivity due to premature death or disability arising as a result of firearm injuries. These tangible or 'victimization' costs can be given a monetary value using the 'cost of illness' approach, an accounting framework that adds up the medical costs of treating injuries and lost earnings from injury or death (Small Arms Survey, 2003; Cook and Ludwig, 2000).

Box 6.6 Non-measurable? The intangible impacts of gun violence

Fatal and non-fatal injuries are the most frequently cited evidence of armed violence. But other costs are hidden, difficult to quantify and thus often go unrecorded. In order to begin understanding these intangible impacts, the Small Arms Survey supported a participatory research project in 12 countries from 2001-2004. Participatory Rural Appraisal (PRA) focuses on the 'subjective' consequences of armed violence by those most affected, and on their own understandings of how to improve their personal safety and well-being (Banerjee and Muggah, 2002).

As is well documented, small arms are used in a wide range of crimes, such as rape, robbery, or kidnapping. The mere display of a weapon often suffices to give its bearer the power to intimidate and coerce. PRA studies conducted in various settings provide valuable insights into the effects of armed violence based on gender and age. For example, research carried out with internally displaced persons in Aceh, Indonesia, shows that while women are primarily worried about risks of rape and sexual harassment, men voiced concern about abduction at gun-point and forced disappearance (Muggah and Moser-Puangsuwan, 2003). In Kosovo, men highlighted 'political uncertainty' as the main factor contributing to their personal insecurity, while women indicated a greater concern about poor infrastructure and the risks of crime and violence (Khakee and Florquin, 2003).

Participatory research suggests that women are often the direct victims of violence; in crime-ridden areas of Jamaica, for instance, their main fears are being tagged as informers by gangs (amounting to a death sentence in some cases), being raped, and being robbed (Moser and Holland, 1997). Youth is another category at risk. Participatory studies have shown how growing up surrounded by armed violence can lead to a 'culture of violence', in which notions of status and identity are linked to the possession of a gun. This tendency is aggravated by the lack of alternatives: 'area stigma' lowers the chances of finding a job, and community associations such as clubs and sports facilities often cease to function.[20]

Depending on the culture in which it is manifested, armed violence can also have more hidden but equally devastating effects: Bangladeshi women who are raped or kidnapped for prostitution can never come back to their community, since they would be rejected and their family would lose face (Banerjee and Muggah, 2002). Fear of retaliation by gangs is the reason most rapes go unreported in some urban areas of Jamaica (Moser and Holland, 1997). Disappearances in Aceh provoke all the more anxiety as it is believed the dead have to be buried quickly for their spirits to avoid suffering (Muggah and Moser-Puangsuwan, 2003).

Source: Pézard (2003)

Often underestimated, however, are the intangible costs of gun violence, including declines in physical and mental health amongst victims and witnesses of gun violence (Greenspan and Kellermann, 2002; Brent *et al.*, 1993a). Although challenging to quantify (see Box 6.6), these costs must be taken into account to reveal the true extent of the impacts inflicted by armed violence on societies. A promising attempt was made in the United States with the 'willingness to pay' approach, which relies on contingent-valuation survey methods: respondents are asked how much they would be willing to pay in additional taxes for a programme resulting in a 30 per cent reduction in gun injuries. It was ultimately estimated that the total cost of gun violence amounted to USD 80 billion annually, which represents a USD 50 billion increase over estimates that only take quantifiable impacts into account (Cook and Ludwig, 2000). While this method has the potential to produce revealing international comparisons, it remains to be tested in other contexts.

Comparable research on the relative costs of gun violence and overall violence is urgently needed to advance the debate. If firearm violence imposes greater costs than other types of violence, then reducing the proportion of total violence committed with small arms would trigger net benefits. Regardless of overall levels of crime and violence, reducing the percentage of violent acts committed with firearms would diminish the burden of violence by removing the additional intangibles or side effects incurred by gun violence. As a result, policies and interventions that succeed in reducing this ratio can be seen as especially effective and worthwhile even though overall violence levels, which appear to be contingent upon a range of risk factors, may remain steady or even increase. One consequence is that gun control laws seem much more effective in reducing levels of gun violence than overall levels of violence. In Canada, the ratio of crimes committed with firearms has gone down steadily since the introduction in 1977 of a firearm certificate programme (Waller, 2003, citing Canadian Centre for Justice Statistics, 2003a, 2003b). By 2002, the proportion of homicides committed with guns had dropped to 26 per cent, and stabbing became the most prevalent means of committing homicides, representing 31 per cent of recorded cases (Hung, 2003). Similar patterns can be observed following the introduction of gun control legislation in Australia (see Box 6.4) and the United Kingdom (see Box 6.5).

EXPERIENCES AND RESPONSES TO SMALL ARMS-RELATED CRIME IN AFRICAN COMMUNITIES AND OTHER LOCAL SETTINGS

Homicide and suicide rates are useful indicators for assessing the use of small arms in violence and crime, but it is important to recognize that they reflect only a fraction of what occurs at the local level. Various connections emerge between small arms and crime in selected urban and rural communities in six African countries under review: Cameroon, Ghana, Kenya, Nigeria, Senegal, and Zambia.[21] Findings from studies undertaken in Peshawar and Kosovo are also presented to illustrate the global nature of some of the trends identified in Africa.

Regional overview: Small arms and crime in the sub-Saharan continent

According to available data, Africa appears to be significantly affected by firearm violence, carrying approximately 18 per cent of the global burden of firearm homicides and suicides (see Figure 6.2). This is also reflected in the relatively high level of use of firearms in violent crime, with small arms used in 35 per cent of homicides (Figure 6.4), 13 per cent of robberies, 5 per cent of assaults and threats, and 2 per cent of sexual offences (Table 6.1). Within the region, South Africa seems to be the country most affected by gun violence, with an annual rate of 30 firearm homicides per 100,000, placing it second in the world only to Colombia (Small Arms Survey, 2004). South Africa also seems to lead the region in the proportion of violent crimes committed with firearms (Table 6.3), although this data is only available for a limited number of countries.

These regional statistics, however limited, confirm that firearm use in violent crime is an important issue in the continent. With an estimated 30 million small arms (a mere 5 per cent of the global stockpile), about 80 per cent of which are in civilian hands (Small Arms Survey, 2003, pp. 80–1), however, Africa is not as awash with small arms as commonly believed. On the other hand, Table 6.3 suggests that some sub-regions, countries, and communities are clearly more affected than others.

Table 6.3 Percentage of violent crimes committed with firearms in selected African countries

Country*	Homicides (%)	Robberies (%)	Assaults and threats (%)	Sexual offences (%)
Botswana	N/A	7.3	0	0.8
Guinea	8.0	N/A	N/A	N/A
Burkina Faso	9.5	N/A	N/A	N/A
Lesotho	55.7	4.8	12.4	3.2
Mozambique	N/A	4.4	7.31	4.6
Namibia	N/A	7.3	5.1	2.5
Nigeria	N/A	27.3	9.4	N/A
South Africa	48.0	58.5	28.3	14
Swaziland	N/A	7.2	6.9	2.2
Tanzania	7.5	N/A	N/A	N/A
Uganda	N/A	9.9	5.9	3.0
Zambia	50.0	5.9	2.5	0
Zimbabwe	65.5	6.1	2.0	2.3

Note: * Use of firearms in homicide figures is at the national level and calculated from Small Arms Survey (2004). Use of firearms in other types of violent crime is drawn from 1,000–1,500-respondent ICVS surveys administered in the capital cities of the respective countries (van Kesteren, 2003).

The vast bulk of the academic literature on crime in Africa tends to focus on the role of the state (Mthembu-Salter, 2003). A pioneer in this field is the French author Jean-François Bayart, who wrote the seminal *The State in Africa: The Politics of the Belly*, in 1993. A later text co-written by Bayart, *The Criminalisation of the State in Africa* (1999), is also an important reference, as is Patrick Chabal's book, *Africa Works: Disorder as Political Instrument* (1999). The literature available on the role of small arms in crime in Africa is limited to a number of countries, such as South Africa, Tanzania, or Kenya (Chetty, 2000; Jefferson and Urquhart, 2002; Muchai and Jefferson, 2002). One emerging research theme in the region has been the phenomenon of the illicit production of small arms (Small Arms Survey, 2003, pp. 29–31; Aning, 2003b).

This section of the chapter represents a modest attempt to improve our understanding of the role of small arms in crime in a region with limited data collection systems. In order to address issues of lack of availability and poor reliability of official statistics in the region, the Small Arms Survey uses a similar methodological framework in all six case-study countries, drawing on a combination of qualitative and quantitative data collection approaches.[22]

Local experiences of armed criminality in selected African urban and rural contexts

The types of crime involving small arms are numerous and vary between urban and rural areas. In urban contexts, small arms tend to be used primarily in violent crimes (homicides, armed robberies, assaults). Small arms are also used in politically motivated killings in Douala (Atanga, 2003) and Nairobi (Sabala and Mkutu, 2003), as well as in ethnic and religious clashes in Nigeria.[23] In Dakar, most recorded cases involve the illicit possession or use of firearms.[24] In rural areas, small arms-related crime appears to be more varied and linked to the local context. In the Northern Region of Cameroon, small arms are typically used in highway banditry (Atanga, 2003). Gun crime in Kitale is usually linked to land disputes and livestock rustling (Sabala and Mkutu, 2003), while armed poachers threaten wildlife in Zambia's Kafue National Park (Mthembu-Salter, 2003).

Given the variety of crimes concerned, criminals are found to use a number of different weapons. While in other contexts, such as in the United States, crime weapons are primarily handguns, military assault rifles are often found in the hands of African criminals. Poachers in Zambia's Kafue National Park, for instance, use AK-47 assault rifles allegedly brought into the country by Angolan refugees (Mthembu-Salter, 2003). In Cameroon's Northern Region, more than half the highway bandits are former combatants primarily from the Central African Republic, Chad, and Nigeria. Based on the weapons seized by the police, these bandits use assault rifles allegedly smuggled in from the above-mentioned neighbouring countries (Atanga, 2003). Illicitly manufactured firearms are also being used for criminal purposes. This situation is pronounced in Ghana, where about 30 per cent of firearm-related crimes are perpetrated with home-made weapons (Aning, 2003a). This proportion was even higher in Dakar, where more than half the crime guns seized by the police were identified as craft small arms. It must be noted, however, that firearms were secondary as weapons of crime in Dakar, far behind bladed weapons (Agboton-Johnson, 2003).

African criminals rely on a wide variety of weapons, including military assault rifles and illicitly manufactured guns.

The demographic profiles established in all case studies usually confirm the common belief that the primary offenders are young males. In Ghana, however, it was noted that women often play a supportive role in criminal activity, helping with the general planning of operations, spying or approaching particular targets, caring for sick or wounded accomplices, or acting as intermediaries between wanted criminals and traditional healers (Aning, 2003a).[25] Another gendered finding was that close to 80 per cent of the gun criminals surveyed in Kitale, Kenya, were married.[26] In most cases, perpetrators tended to be nationals of the countries studied. In Cameroon's Northern Region and in Kaolack, Senegal, however, former combatants from troubled neighbouring countries were also involved (Agboton-Johnson, 2003; Atanga, 2003). As will be discussed further, law-enforcement officials and even politicians are also involved in various aspects of armed crime.

Contributing factors to armed crime? Conflict weapons and lack of governance

Proximity to zones of armed conflict as well as issues of governance and institutional capacity seem to affect the prevalence of armed crime.[27]

Proximity to unstable areas appears to facilitate armed crime, as weapons that were originally used in conflict (hereafter 'conflict weapons') are often found in the hands of criminals. A revealing case is that of Senegal. In the capital city Dakar, only about 4.5 per cent of weapon injuries treated in the emergency room at Le Dantec hospital were caused by firearms. In the Kaolack suburban area, however, 20 per cent of the injuries caused by a weapon were inflicted by firearms.[28] Kaolack's proximity to zones of armed conflict such as Casamance and Guinea Bissau might help explain these higher rates of firearm injuries. The situation is similar in the Northern Region of Cameroon, which borders

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A Congolese woman walks past a 'no weapons' sign at the edge of the north-eastern town of Bunia in June 2003. Enforced by international troops, the gun ban is to help curb crime involving weapons formerly used in conflict.

troubled states such as Chad and the Central African Republic. Highway banditry in the region is often perpetrated by former combatants from neighbouring countries, most often involving the use of military assault rifles such as AK-47s and FN FALs (Atanga, 2003).

Box 6.8 Small arms and crime in Peshawar District, Pakistan

The number of criminal cases increased by 23 per cent from 1998 to 2001 in Pakistan's North-West Frontier Province (NWFP), home to some 15 million people and located on the border with Afghanistan (Aziz Khan, 2003). Statistics obtained from the Police Department of Peshawar suggest that the Peshawar District, one of the NWFP's 22 districts, experiences high levels of violent crime: homicide rates range from 8 per 100,000 in urban areas to 12 per 100,000 in rural areas.[29] The police believe that around 90 per cent of these homicides are committed with small arms. Small arms are also used in robberies, sectarian violence, terrorist acts, and other personal and tribal disputes.

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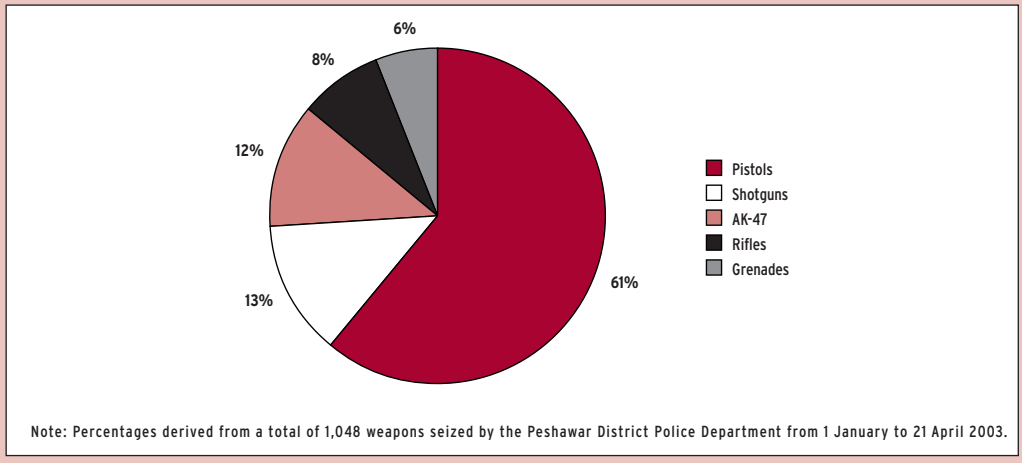
An arms dealer demonstrates a handgun in a gun shop in Darra Adam Khel, Pakistan.

Illicitly manufactured small arms are cheap and widely available in the district, with an estimated 200 illicit workshops and 1,900 illegal arms shops located in the Bara, Darra Adam Khel, and Jamrud black markets.[30] Between USD 10 and USD 70 can buy anything from revolvers to shotguns, USD 6 is enough for a grenade or a landmine, while rocket launchers and heavy machine guns cost, respectively, USD 500 and USD 1,000. AK-47s are also easily accessible and are reportedly smuggled in from Afghanistan or manufactured locally in Darra Adam Khel. The types of weapons seized by the police confirm the availability of all these types of weapons (see Figure 6.9).

Figure 6.9: Small arms seized by the Peshawar District Police, by category



Note: Percentages derived from a total of 1,048 weapons seized by the Peshawar District Police Department from 1 January to 21 April 2003.

Rising crime rates and small arms availability are overwhelming the police force, which can only count on one police officer per 28,000 people. Residents and businesses in Peshawar are responding by relying increasingly on private security means: out of the 35 private security companies registered with the local government, 28 were created between 1997 and 2002, in the heat of the crime wave. This privatization is partly formal, with banks and upper-class residents resorting to the services of private security guards armed with pistols or shotguns. On the other hand, residents with more limited means appear to turn to gun ownership for protection.

Source: SPADO (2003)

The use of conflict weapons in criminal activities highlights the importance of effective disarmament, demobilization and reintegration of ex-combatants.

Conflict weapons tend to be used as criminal implements, particularly where there is no adequate disarmament, demobilization, and reintegration (DDR) programme at the end of the conflict. In Borno state, north-east Nigeria, both the weapons and the criminals often come from across the border in Chad, an arena of internecine conflict. Chadian fighters come across the border to sell their weapons when they need money for food and other essentials (Ebo, 2003). This same practice is common in the Mano river states of Liberia, Sierra Leone, and Guinea (Obasi, 2002). The problems caused by conflict weapons, both in post-conflict settings and in neighbouring countries and areas, highlight the importance of undertaking effective DDR programmes. The use of conflict weapons in crime, however, appears to be a global phenomenon (see Boxes 6.7 and 6.8) and should not be interpreted as being limited to Africa.

The second factor is related to the issue of governance, which is characterized by the lack of capacity and, in several instances, the lack of accountability of the police forces.[31] These shortcomings can be measured through impunity or conviction rates. In Senegal, 40 per cent and 38 per cent of criminal cases are not prosecuted in Kaolack and Dakar.[32] In 2002 in the Southern Province of Zambia, a comparison of police and court statistics shows that only 25 per cent of recorded murders were actually prosecuted by the High Court (Mthembu-Salter, 2003). In Kaduna, Nigeria, the proportion of firearm-related cases that were ultimately prosecuted for the period 1997–2001 was even lower, at a mere 18 per cent.[33]

These limitations of the public security sector often result in inadequate police services, but also in the lack of professionalism on the part of public security agents, sometimes reflected by their personal involvement in crime. In Douala, Cameroon, a security report issued in 2000 listed 84 members of the police, gendarmerie, and army involved in cases of armed banditry that were subsequently prosecuted (Atanga, 2003). Some policemen in Ghana collaborate with robbers by lending them their weapons and clothing, enabling what are often referred to as 'pobbers' (police-robbers) (Aning, 2003a). Several Nigerian army soldiers and police officers have been sentenced to death for armed robbery (Ebo, 2003), but more shocking is the role of politicians in arms proliferation and armed crime. In Nigeria's Cross River state, of the 54 illegal guns seized by the police in the first half of 2002, 16 were recovered from politicians, and another 8 from politically motivated murders (Chigbo, 2002).

Armed criminality and the privatization of security

Given the above-mentioned shortcomings of the public security sector, the fact that security is being privatized comes as no surprise in areas where armed criminality is prevalent. As the services of private security guards are relatively expensive and therefore used mainly by businesses and wealthy social classes, the low-income classes have turned to so-called vigilante groups[34] or informal community-based organizations providing security services.

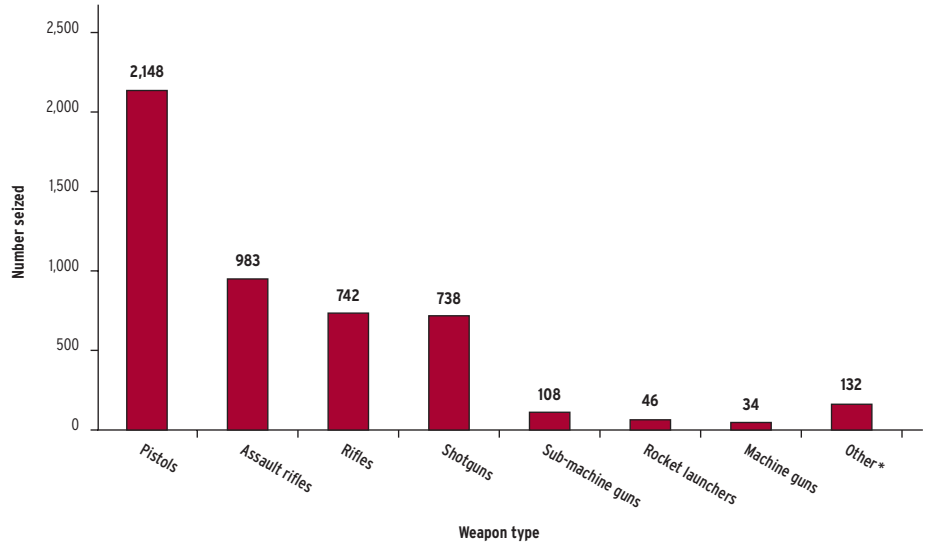
The increasing role of private security companies (PSCs) was noted in all urban areas studied. In Zambia, for instance, it was estimated that the criminal justice system's budget (including the police, the judiciary, prisons, and so forth) was roughly equivalent to 1 per cent of the GDP, which represents only half of what is spent annually for the services of private security guards (Mthembu-Salter, 2003). The private security sector appears to be booming in areas where small arms crime is more prevalent. In Kaduna city, Nigeria, the number of clients of a sample of five PSCs[35] tripled from 1997 to 2001, while the number of guards hired has multiplied by five (Ebo, 2003). Ghana has also experienced a boom in the sector, with more than 110 such companies now in operation in the country (Aning, 2003a). While no such firms existed in Cameroon in 1980, more than 180 could be counted in 2002, employing about 15,000 staff (Atanga, 2003).

Box 6.8 Conflict weapons and crime in Kosovo

Between 330,000 and 460,000 of the guns left over by several years of armed conflict in Kosovo are estimated to have found their way into civilian hands. Many arms are kept by civilians for self-defence, while others are being used for criminal purposes. With a murder rate of 4.45 per 100,000 for 2001, however, violent crime is not more prevalent in Kosovo than in other Central and Eastern European countries. Reported crime levels even seem to be decreasing in the aftermath of the conflict, although this could be due in large part to the presence of international police and to a tendency to under-report criminal offences.

More worrying, however, is the extent to which firearms are used. Almost three out of four murders and close to a third of robberies are committed with a small arm. When compared to Estonia and Hungary's much lower ratios (13 and 15 per cent in Estonia, 11 and 8 per cent in Hungary), this suggests that remaining conflict weapons in Kosovo created more opportunities for the use of guns in crime than in contexts where the transition from communism occurred in a more peaceful manner (Khakee and Florquin, 2003, pp. 36–7).

Figure 6.10 Small arms and light weapons seized by the Kosovo Police Service, 2000–2002



Note: * 'Other' includes air rifles, grenades, and sniper rifles.

Source: Khakee and Florquin (2003)

Many of the small arms found in the hands of criminals are military weapons. Pistols and AK-47 assault rifles are the most commonly used small arms in homicides and robberies. Pistols and automatic weapons were also cited during participatory focus group discussions among the three most dangerous weapons (together with knives), and are also the weapon types most commonly seized by the police (see Figure 6.10). The assault rifles that are confiscated are primarily AK-47 Kalashnikovs, with a few Zastavas. The use of combat assault rifles in crime indicates clearly that many of the weapons that were once used in conflict (the Kosovo Liberation Army's AK-47s, and the Yugoslav Zastavas) have now become prominent tools in criminal activity.

Source: Khakee and Florquin (2003)

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Private security takes on a ghastly dimension: Residents of a working-class suburb of Lagos, Nigeria, look on as the body of an alleged armed robber burns in the street in May 1999. By catching and killing alleged criminals themselves, vigilante groups such as this one are taking law and order into their own hands.

Another manifestation of the privatization of security in Africa as a response to armed criminality has been the emergence of informal vigilante groups in low-income and rural areas. This phenomenon reflects the inability of state agents to cope with armed criminality, but it is also due to the fact that formal PSCs are too costly for the average citizen. Vigilante groups consist of volunteers organized at the community level to patrol communities. They are usually paid small monthly fees by each household. In Kaduna city, Nigeria, for instance, vigilante services cost about USD 4 per month per household. Residents of rural Zonkwa have to pay less than USD 0.15 a month, although wealthier community members and local authorities also contribute larger sums (Ebo, 2003).

The last aspect of the privatization of security concerns the increasing reliance on small arms ownership for self-defence. In Nigeria, for instance, when asked about their perception of the private ownership of guns in small-scale (n=100) community surveys, most respondents saw it as 'good' both in urban Kaduna (62 per cent vs. 38 per cent 'bad') and in rural Zonkwa (45 per cent vs. 32 per cent who answered 'bad' and 21 per cent who said they did not know) (Ebo, 2003). Private guns can be legal but also illicit given the booming illicit manufacturing sector, a phenomenon that appeared in all case studies. Home-made pistols and rifles cost USD 60 and USD 80, respectively in Kaduna in 2001, although prices have been continually climbing, reflecting an increase in demand (Ebo, 2003). Illicit guns can also be smuggled in from neighbouring countries. In Senegal, a handgun costs only around USD 40 along the border with Gambia, but up to USD 100 by the time it is smuggled into urban black markets (Agboton-Johnson, 2003).

CONCLUSION

Used in almost 40 percent of all homicides, but also in assaults, threats, robberies, sexual offences, and suicides, firearms are clearly a common tool for perpetrating societal violence. Whether gun accessibility affects overall levels of violence is, however, more difficult to assess. The lethality of guns increases the risk of injury and death and raises perceptions of threat, but firearm ownership by law-abiding citizens can also contribute to deterring crime. The balance between these two effects is the subject of ongoing debate.

The impacts of gun violence, however, are not limited to fatal and non-fatal firearm injuries. A wide variety of small arm-related crimes—committed either by individuals or by the state—can threaten a community's physical, economic, social, political, and cultural security. While quantifying these impacts can be challenging, recent research suggests that the societal costs of gun violence are substantially higher than those associated with other means. Further work in this area is critical, as it provides a rationale for reducing violence committed with small arms, a goal that gun control measures seem able to achieve.

Gun violence can challenge a state's monopoly on the maintenance of law and order. Particularly in contexts where the state appears unable to provide an effective response to armed violence, the privatization of security is emerging as a common response to firearm-related crime. While big businesses and the wealthy can afford the services of registered companies and guards, many others must rely on informal vigilante groups, or on private gun ownership to gain a greater sense of security. Unless effective responses to gun violence are put in place, the range of actors taking arms for self-defence can only increase.

APPENDIX 6.1: ESTIMATED ANNUAL FIREARM HOMICIDE AND SUICIDE BY REGION*

Region	Number		Per 100,000		% firearm use in violent act
	Lower threshold	Upper threshold	Lower threshold	Upper threshold	
Africa firearm homicide	26,385	40,600	3.83	5.90	35
Africa firearm suicide	2,227	4,050	0.33	0.59	15
Africa Total	**28,612**	**44,650**	**4.16**	**6.49**	**31**
LA and Caribbean firearm homicide	69,460	84,000	12.80	15.47	60
LA and Caribbean firearm suicide	4,270	6,090	0.79	1.12	21
Latin America and Caribbean total	**73,700**	**90,090**	**13.59**	**16.59**	**53**
North America firearm homicide	10,300	11,400	3.17	3.50	60
North America firearm suicide	17,400	18,000	5.34	5.52	50
North America total	**27,700**	**29,400**	**8.51**	**9.02**	**53**

Region	Number		Per 100,000		% firearm use in violent act
	Lower threshold	Upper threshold	Lower threshold	Upper threshold	
Middle East firearm homicide	2,690	9,300	0.52	1.8	30
Middle East firearm suicide	120	300	0.02	0.06	1
Middle East total	**2,800**	**9,600**	**0.54**	**1.26**	**17**
CE Europe firearm homicide	7,800	14,800	1.63	3.09	20
CE Europe firearm suicide	3,370	6,750	0.70	1.41	5
CE Europe total	**11,170**	**21,550**	**2.33**	**4.50**	**10**
Western Europe firearm homicide	1,280	1,390	0.32	0.35	32
Western Europe firearm suicide	6,080	6,630	1.52	1.66	13
Western Europe total	**7,360**	**8,020**	**1.84**	**2.01**	**15**
South-East Asia firearm homicide	16,778	27,300	1.04	1.45	30
South-East Asia firearm suicide	964	2,520	0.06	0.10	1
South-East Asia total	**17,742**	**29,820**	**1.1**	**1.55**	**12**
Asia Pacific firearm homicide	8,930	9,940	0.51	0.54	16
Asia Pacific firearm suicide	2,310	6,880	0.13	0.39	2
Asia Pacific total	**11,240**	**16,820**	**0.64**	**0.93**	**4**
World firearm homicide	143,623	198,730	2.27	3.14	38
World firearm suicide	36,741	51,220	0.58	0.81	6
World total	**180,364**	**249,950**	**2.85**	**3.96**	**19**

*Note: Regions are based on the regional divisions used in WHO (2002, pp. 262–9). Following are the lists of countries included in each region:

Africa (includes countries categorized by the WHO as 'African region'): Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Côte d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Republic of Congo, Reunion, Rwanda, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, South Africa, St. Helena, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.

Latin America and the Caribbean (includes countries categorized by the WHO as 'region of the Americas, low and middle income'): Anguilla, Antigua and Barbuda, Argentina, Aruba, Barbados, Belize, Bermuda, Bolivia, Brazil, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, French Guiana, Grenada, Guadeloupe, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, Uruguay, Venezuela.

North America (includes countries categorized by the WHO as 'region of the Americas, high income'): Bahamas, Canada, St. Pierre and Miquelon, United States, Virgin Islands.

Middle East (includes countries categorized by the WHO as 'Eastern Mediterranean region'): Afghanistan, Bahrain, Cyprus, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen.

Central and Eastern Europe (includes countries categorized by the WHO as 'European region, low and middle income'): Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Macedonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Malta, Moldova, Poland, Romania, Russian Federation, Serbia and Montenegro, Slovakia, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan.

Western Europe (includes countries categorized by the WHO as 'European region, high income'): Andorra, Austria, Belgium, Channel Islands, Denmark, England and Wales, Faeroe Islands, Finland, France, Germany, Gibraltar, Greece, Greenland, Holy See, Iceland, Ireland, Isle of Man, Israel, Italy, Liechtenstein, Luxemburg, Monaco, Netherlands, Northern Ireland, Norway, Portugal, San Marino, Scotland, Spain, Sweden, Switzerland.

South East Asia (includes countries categorized by the WHO as 'South East Asia region'): Bangladesh, Bhutan, Democratic People's Republic of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand.

Asia Pacific (includes countries categorized by the WHO as 'Western Pacific region'): Australia, Brunei Darusalam, Hong Kong, Japan, New Zealand, Republic of Korea, Singapore, Taiwan, Cambodia, China, Cook Islands, Federated States of Micronesia, Fiji, French Polynesia, Guam, Kiribati, Lao PDR, Macao, Malaysia, Marshall Islands, Mongolia, Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Tokelau Island, Tonga, Tuvalu, Vanuatu, Vietnam.

APPENDIX 6.2: METHODOLOGY FOR ESTIMATING GLOBAL FIREARM SUICIDES AND HOMICIDES

The estimate of firearm homicide and suicide presented in this chapter (see Appendix 6.1) is based on several existing data sets that have been combined on a regional basis (see Appendix 6.1 for a description of the regional divisions used). Official statistics on firearm suicides and homicides were used to establish a lower threshold of regional firearm homicides and suicides. Adjusted data that takes into account epidemiological surveys and cause of death statistical models combined with official statistics provided the basis for upper thresholds. Estimates were calculated separately for each region using a regional firearm suicide and homicide rate.

The estimate presented in this chapter relies on the regional division adopted by the World Health Organization (WHO, 2002) to estimate global homicides and suicides. A regional approach is an improvement over previous estimates based on a global approach. Moreover, WHO (2002) estimates of overall violent deaths provide a useful comparative basis for estimating firearm mortality. As explained below, the WHO estimates are central in generating the upper-threshold firearm death estimate, which makes a similar regional approach necessary.

Establishing lower thresholds

Data sets on international public health and criminal justice that monitor firearm mortality include the WHO (2002, 2003), the UN (1998, 1999), the UNODC (2003), SAFER-NET and HELP Network (2001), and a number of government and research reports (see Appendix 6.3). Rates of firearm suicide and homicide per 100,000 were compared and the most recent figure was entered into a database. In cases where considerable discrepancies between public health and criminal justice data were found, further sources, when available, were sought to help make a judgement. Based on the countries for which firearm mortality data was available, regional firearm homicide and suicide rates per 100,000 were calculated from UN Population Division (2002). This rate was then applied to the population of those countries for which no documented firearm data existed and is quoted as the lower threshold. Countries experiencing firearm mortality rates significantly higher (or lower) than the regional average were discarded as outliers so that they would not influence regional rates.

Adjusting for under-reporting and under-recording to establish the upper threshold

The official statistics used to establish the lower threshold are very likely to produce an underestimate due to under-reporting by the population and under-recording by authorities in official statistics (Fajnzylber, Lederman, and Loayza 2000; MacDonald, 2002). Individual and socio-economic factors comprising age, gender, ethnicity, community victimizations rates, perceptions of the police, and employment status (MacDonald, 2000) influence under-reporting. Under-recording is often a factor of development levels and institutional capacity (Fajnzylber, Lederman, and Loayza 2000).

The estimate presented here used available public health and criminal justice data on both overall and firearm homicides and suicides to establish regional patterns of firearm use in violent deaths (computed as the percentage of homicides and suicides committed with firearms). These ratios were then applied to WHO regional estimates for overall homicide and suicide to establish the upper threshold. The WHO estimates were used as they adjust homicide and suicide rates for under-reporting and under-recording by taking into account epidemiological surveys and cause of death statistical models (WHO, 2002, p. 258).

Unintentional firearm deaths and firearm deaths of undetermined intent

Global unintentional firearm deaths and firearm deaths of undetermined intent were not estimated as the data is too limited and inconsistent from year to year. The 18,000 such deaths documented annually are, however, added to the final global estimate, which implies that global annual non-conflict-related firearm deaths may even be higher than the 200,000–270,000 range suggested in this chapter.

APPENDIX 6.3: SOURCES AND AVAILABILITY OF FIREARM MORTALITY DATA

Data sources

The national firearm mortality data used for estimating non-conflict-related firearm mortality in this chapter are posted on the Small Arms Survey website (see Small Arms Survey, 2004). Table 6.4 shows the main data sources. The large majority of statistics were taken from WHO/public health datasets (WHO, 2002, 2003), although these were cross-checked for reliability with criminal justice sources when available. Criminal justice data—that is, data recorded by the police—was drawn from the UN (1998, 1999), UNODC (2003), SAFER-NET and HELP NETWORK (2001); a number of reports from research institutes citing recent national statistics were also used.

Table 6.4 Data sources

Data source	Homicide	Suicide	Unintentional	Undetermined
WHO (2002, 2003)	47	61	64	63
UN (1998, 1999)	10	10	13	1
UNODC (2003)	26	N/A	N/A	N/A
SAFER-NET and HELP NETWORK (2001)	3	2	3	1
Other	19	3	2	1

Note: Figures represent the number of countries for which data from the indicated source was used.

Most of the data used in this estimate, therefore, originates from WHO statistics, which provide the most reliable measure of committed homicides. In effect, subtractions and triangulation are required with criminal justice sources (UN, 1999; UNODC, 2003) as attempted homicides are sometimes, but not systematically, included. While there are some limitations when comparing WHO and UN sources at the national level, research has shown that UN and WHO homicide rates are significantly correlated when data is aggregated to produce global estimates (UNODCCP, 1999, Box 0.7, p. 12). In other words, mortality statistics are suitable for making global and regional comparisons, but must be treated with caution in cross-national analyses as they emanate from different sources and years.

Data availability by manner of death

Drawing from the main international public health and criminal justice datasets and a series of national reports and sources, the Small Arms Survey is able to document 160,000 annual firearm deaths in some 110 countries. Table 6.5 shows the extent of available data for the main four categories of non-conflict related firearm deaths.

Table 6.5 Availability of firearm death statistics by manner of death

Manner of firearm death	Homicide	Suicide	Unintentional	Undetermined	All manners*
Number of documented annual deaths	110,370	31,065	6,903	11,308	159,646
Documented annual deaths per 100,000	3.32	1.01	0.22	0.65	4.66
Number of countries documented	105	76	82	66	110
Population covered	3,320,957,782	3,071,805,782	3,155,425,782	1,727,061,782	3,430,697,782

Note: *A few countries have data only for total firearm deaths, which explains why the 'all manners' number is slightly larger than the sum of 'homicide,' 'suicide,' 'unintentional', and 'undetermined' figures.

Data availability by region

While the temptation is great to apply the documented ratio of 4.66 per 100,000 firearm deaths to the global population of 6.3 billion people (which would give a rate of some 295,000 firearm deaths annually), this would seriously overlook important disparities between countries. For example, only four countries (Brazil, Colombia, South Africa, and the United States) carry more than 60 per cent of the (documented) burden with approximately 98,000 annual firearm deaths and a combined rate of 17.5 firearm deaths per 100,000.

Moreover, the availability of data differs greatly by region: while data is available for the majority of the large North American and Western European countries (see Small Arms Survey, 2004), the available data covers only 18 per cent and 19 per cent of the populations of the Middle East and Africa, respectively. These regional differences in data availability (and reliability) are reflected in the variation between the upper threshold and lower threshold at the regional level as presented in Appendix 6.1: the relative difference[36] between the lower and upper thresholds is much higher in Central and Eastern Europe (93 per cent) and the Middle East (133 per cent) than for North America (6 per cent) and Western Europe (9 per cent). This is because, in regions where little data was available, more arbitrary judgements were made to establish regional rates and ratios, thereby increasing the error margin.

Data availability by year

The national firearm mortality statistics used in the estimate reflect the most recent available year. Due to data scarcity, the available data was drawn from a wide range of years (1994–2002). However, and as shown by Table 6.6, more than 86 per cent of the annual statistics used to produce the estimate related to years between 1997 and 2001. The estimate presented in this chapter can therefore be said to reflect the situation in the late 1990s.

Table 6.6 Firearms mortality data by year

Year	Homicide	Suicide	Unintentional	Undetermined	Total
2002	2	0	0	0	2
2001	7	4	4	4	19
2000	36	23	25	23	107
1999	18	22	19	17	76
1998	8	9	10	9	36
1997-2001*	11	0	0	0	11
1997	12	7	8	7	34
1996	3	1	5	1	10
1995	7	8	8	3	26
1994-96**	0	0	1	1	2
1994	1	2	2	1	6

Notes: Figures represent the number of countries for which data from the indicated year was used. For example, the estimate used firearm homicide data for the year 2000 in 36 countries.
*Data taken from Alpers and Twyford (2003) on a number of Pacific Island countries. Average annual rates were computed based on five-year figures.
**Annual average taken from WHO (2002).

6. LIST OF ABBREVIATIONS

CDC	Centers for Disease Control
DDR	Disarmament, demobilization, and reintegration
GDP	Gross Domestic Product
ICVS	International Crime Victim Surveys
NWFP	North-West Frontier Province (Pakistan)
PRA	Participatory Rural Appraisal
PSC	Private security company
RTC laws	Right-to-carry laws
UNICRI	United Nations Interregional Crime and Justice Institute
WHO	World Health Organization

6. ENDNOTES

[1] See UNECOSOC (2003, Para. 30, 36-39), International Council on Human Rights Policy (2003) and Centre for Humanitarian Dialogue (2003).

[2] See Kates' perspective in Box 6.3.

[3] These include the *United Nations International Study on Firearms Regulation* (UN, 1999), the *United Nations Surveys on Crime Trends and the Operations of Criminal Justice Systems* (UNODC, 2003), and the World Health Organization mortality database (WHO, 2002, 2003).

[4] Includes field research undertaken by the Small Arms Survey in six African countries (Ghana, Zambia, Nigeria, Senegal, Kenya and Cameroon), the Peshawar District of Pakistan, and Kosovo.

[5] See, for example, Kopel, Gallant, and Eisen (2003).

[6] This data was usually drawn from UN, 1998 and Krug *et al.*, 1998. A more recent WHO (2001) study on 52 high- and middle-income countries concluded that more than 115,000 people died in these countries annually from firearm homicide, suicide or accident.

[7] Violent deaths in this chapter refer to deaths from homicide and suicide, following the approach used in WHO (2002). Violent deaths from conflict are not considered in this chapter but will be in future editions of the *Small Arms Survey* (see Box 6.1).

[8] See appendix 6.1 for details about the regional approach used.

[9] The full questionnaire can be found at <http://www.unicri.it/icvs/data/questionnaires/Face_to_Face_2000.pdf >

[10] Its standardized methodology deals with the main limitations of official crime statistics, such as differences in the definition of crimes between countries, differences in official recording procedures, and the population's willingness to report crimes to authorities.

[11] Selected urban areas and/or capital cities of the following countries were used to establish the regional estimates presented in this box: *Western Europe:* Austria, Belgium, Denmark, England and Wales, Finland, France, Italy, Malta, Netherlands, Portugal, Scotland, Spain, Sweden, Switzerland; *'New world':* Australia, Canada, New Zealand, United States; *Africa:* Botswana, Egypt, Lesotho, Mozambique, Namibia, Nigeria, South Africa, Swaziland, Tanzania, Tunisia, Uganda, Zambia, Zimbabwe; *Asia:* Azerbaijan, China, India, Indonesia, Japan, Mongolia, Philippines; *Latin America:* Argentina, Bolivia, Brazil, Colombia, Costa Rica, Panama, Paraguay; *Central and Eastern Europe:* Albania, Belarus, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kyrgyzstan, Latvia, Lithuania, Macedonia, Poland, Romania, Russia, Slovakia, Slovenia, Ukraine, Serbia and Montenegro

[12] Sub-section adapted from Mihorean (2003); Wille (2003).

[13] See WHO (2002, pp. 12–13) for a description of the various categories of factors affecting levels of violence.

[14] See Brent *et al.* (1988, 1991, 1993a, 1993b, 1994, 2001, 2003) and Buckstein *et al.* (1993).

[15] A number of reviews, however, note that certain data limitations make it impossible to determine a plausible precise figure of the number of defensive gun uses (Hemenway, 1997). The analysis of self-protective gun use data, for example, has shown that the majority of reported self-defence gun uses are the consequence of escalating arguments and would be interpreted under the law as illegal, even though the gun users thought they were acting in self-defence (McDowall, Loftin, and Presser, 2000; Hemenway and Azrael, 2000).

[16] Note that this report from Victoria is typical. Across all jurisdictions, thousands of non-prohibited firearms were surrendered in addition to those covered by the Australian Firearms Buyback.

[17] See, for example, Ludwig (1998) Black and Nagin (1998), Duwe, Kovandzic, and Moody (2002), and Maltz and Targonski, 2002). Kovandzic and Marvell (2003), Duggan (2001), and other recent work has demonstrated that RTC laws do not reduce crime. Manning (2003), as cited in Donohue (2003), suggests that correcting Lott and Mustard's (1997) results for autocorrelation would render all of their results statistically insignificant.

[18] The Lott hypothesis has become influential not only in the United States but also at the international level. A study by Wesson (2000) sought to apply the Lott model in the South African context, and suggests that the increase in the number of licensed weapons for the years 1994–99 contributed to a reduction in violent crime and a move towards non-confrontational crimes for personal gain.

[19] Sub-section adapted from Wille (2003) and Anderson and Kates (2003).

[20] See Muggah and Moser-Puangsuwan (2003), Banerjee and Muggah (2002), Moser and Holland (1997).

[21] This section of the chapter is based on field research conducted for the Small Arms Survey by Atanga (2003), Aning (2003a), Sabala and Mkutu (2003), Ebo (2003), Agboton-Johnson (2003), and Mthembu-Salter (2003).

[22] Researchers were asked to investigate two sites in each country, preferably one urban and one rural area, and to focus on three broad themes: the nature and prevalence of small arms use in crime, the impacts of small arms crime in these communities, and public and private responses to armed criminality. The methods used ranged from desk research, collection of official statistics, key informant interviews, focus groups, and small-scale community and/or purposive surveys. This combination of quantitative and qualitative methods was deemed necessary given the well-recognized limitations affecting official statistics in the region. The sites surveyed are *Cameroon:* Douala and the Northern region; *Ghana:* Accra and Madina; *Ethiopia:* Nairobi and Kitale; *Nigeria:* Kaduna and Zonkwa; *Senegal:* Dakar and Kaolack; *Zambia:* Livingstone and Kafue National Park.

[23] 100,000 persons are believed to have been killed in Nigeria in more than 50 ethnic and religious crises since May 1999, with small arms being used frequently in such clashes (CLEEN/OMCT, 2002).

[24] Dakar Police data quoted in Agboton-Johnson (2003).

[25] Traditional healers are believed to have powers to provide protection against, among other things, bullets and police arrest. They are also perceived by many as being able to treat bullet injuries.

[26] Data based on a survey (Sabala and Mkutu, 2003) of the law court files of 77 perpetrators of armed crime in Kitale (30) and Nairobi (47).

[27] This finding, however, can not be generalized to the entire continent. South Africa is the best counter-example, suffering the highest armed crime rates despite relatively lower levels of corruption and stable neighbours.

[28] Data obtained from Kaolack and Dakar (A. le Dantec) hospitals and quoted in Agboton-Johnson (2003).

[29] Annual per 100,000 rates were calculated by multiplying by three the number of homicides recorded by the police from January to April 2003. As a result, these rates may not reflect any seasonal crime trends.

[30] Other estimates suggest as many as 3,000 'father and son' operations selling, trading, and manufacturing small arms in Darra Adam Khel (Small Arms Survey, 2003, p. 32).

[31] The lack of capacity of the public security sector was noted in Ghana, with the police service falling 10,000 officers short of the recommended figure of 25,000 (Tong, 2003). In Zambia, it was estimated that the criminal justice system's budget (including the police, the judiciary, prisons, and so forth) was roughly equivalent to 1 per cent of GDP, which represents only half of what is spent annually for the services of private security guards (Mthembu-Salter, 2003).

[32] Dakar and Kaolack criminal justice data quoted in Agboton-Johnson (2003).

[33] Kaduna State Ministry of Justice data quoted in Ebo (2003).

[34] The term 'vigilante groups' in this chapter does not refer to organized groups of citizens who punish criminals after the fact, as in the United States. In the African context, they are considered as informal private security patrols organized at the community level to prevent and sometimes react to crime.

[35] The five companies are Nigerguards Limited, Blackstar Security Company Limited, Profile Security Services, HNB Security and Protective Company Limited, and Havard Security Services Limited.

[36] Computed as (upper threshold – lower threshold) / lower threshold x 100.

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