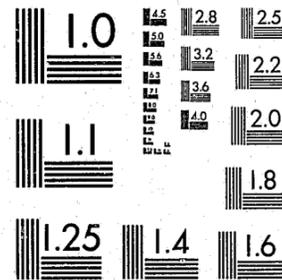


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# Weapons, Crime, and Violence in America

## A Literature Review and Research Agenda

80455

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# **Weapons, Crime, and Violence in America**

## **A Literature Review and Research Agenda**

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November 1981

**U.S. Department of Justice**  
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Abstract

In 1978, under a grant from the National Institute of Justice, the Social and Demographic Research Institute of the University of Massachusetts undertook a broad-ranging review of the existing literature on weapons, crime, and violence in the United States, the results of which are published here. The review covers all major research literatures related to weapons and weapons use in the United States, both licit and illicit. The existing stock of private firearms (as of 1978) is estimated at 120 ± 20 million guns, an increase of some 40 million over ten years. Growth in the number of U.S. households, increased sport and recreational demand, additional weapons purchases by families already owning one or more guns, and enhanced small arms demand among the U.S. police appear to account for most or all of the 40 million gun increase. Despite a common hypothesis, there is no good evidence that the fear of crime and violence was a very important factor.

Roughly three-quarters of the private firearms stock is owned primarily for sport and recreation; the remainder, for protection and self-defense. Ownership for sport and recreation is essentially a cultural phenomenon, a product of early childhood socialization. Relative to non-owners, gun owners tend to be male, rural, Southern, Protestant, affluent, and middle class.

There appear to be no strong causal connections between private gun ownership and the crime rate. Crime may be a motivating factor in the purchase of some protective weapons, but these constitute no more than about a quarter of the total private stock. There is no compelling evidence that private weaponry is an important cause of, or a deterrent to, violent criminality.

Over the past two decades, the trend in all categories of violent crime is upward. Crime rates peaked in the early 1970's and have been more or less stable since (through 1978). Approximately 30,000 deaths occur annually as the result of accidental, homicidal, or suicidal uses of guns. Studies of "crime guns" confiscated by police confirm that they are predominantly handguns; a sizable fraction enter criminal channels through theft from residences; many are found to have crossed state lines before their use in crime.

It is commonly hypothesized that much criminal violence, especially homicide, occurs simply because the means of lethal violence (firearms) are readily at hand, and thus, that much homicide would not occur were firearms generally less available. There is no persuasive evidence that supports this view.

Majorities of the U.S. population have favored licensing or registration of private firearms, especially handguns, for as long as pollsters have asked the question. Measures substantially more strict than these (for example, bans on the ownership of handguns), however, do not enjoy majority support.

There are roughly 20,000 "gun laws" already on the books; the wide variability of provisions across jurisdictions tends to vitiate the effects of these laws. In general, evaluation studies of the effects of gun laws on crime tend to show that these effects are modest or non-existent, although there are some apparent exceptions to this conclusion.

### Preface

In 1979 through 1981, the Social and Demographic Research Institute (University of Massachusetts, Amherst) undertook a comprehensive research project, under funding from the National Institute of Justice, focused on "Weapons and Violent Crime." One part of this project was to consist of a review of published literature in the area, the results of which are contained in the present volume. A second part was to consist of a comprehensive Annotated Bibliography, which is contained in a companion volume. Three other reports from the project are also available, including an Executive Summary that provides a brief discussion of the project as a whole.<sup>1</sup>

Violent crime, and the weaponry with which it is committed, are topics of considerable and often bitter dispute, and, as a consequence, matters about which scholarly objectivity is sometimes difficult to maintain. In preparing this review, we have tried to set aside our own biases and to let each published piece of research stand or fall on its own merits. It would be presumptuous to claim that we have succeeded in this, and in any case, the objectivity of our treatment is for readers, not us, to decide.

An earlier draft of this volume was reviewed by several people -- some prominently identified with the pro-gun forces, others prominently identified with the anti-gun (or pro-gun-control) forces, and still others of a more neutral persuasion. All three sets of reviewers found numerous errors of omission and commission which have been corrected, to the extent possible, in the present version. It is a fair generali-

zation that pro-gun reviewers were on the whole very distressed by the anti-gun bias revealed in this report, and that the anti-gun reviewers were equally distressed by the pro-gun bias found here. This pattern has given us no small amount of comfort, as it suggests that we have perhaps come closer to an objective treatment of the issues than ideologues on either side are willing to admit.

No project of this scope is completed without the advice and assistance of numerous individuals. Our first debt, of course, is to the National Institute of Justice for funding the project in the first place. Although NIJ paid for this research, neither the Institute, the Department of Justice, nor the Federal government is responsible for the analyses, interpretations, opinions, and conclusions expressed here, all of which, for better or worse, remain our own.

Our Project Manager at NIJ was Dr. Lois Mock of the Community Crime Prevention Program, and we extend our deep gratitude to her for her many valuable insights and for her patience with the rhythms of University life. Lois must also be thanked for "insulating" us from the various political struggles that are endemic to the Federal bureaucracy, particularly in the late stages of the project. We also thank the staff at NIJ for contributing many valuable comments and criticisms of the larger study during a policy briefing in which the major findings, and their implications, were aired.

We are also grateful for the time and advice given us by our Advisory Committee, who met formally twice during the course of the project and who were also pestered throughout by phone and mail. Members of the committee and their affiliations were as follows: Dr. Alan Lizotte,

Indiana University; Dr. Philip Cook, Duke University; Dr. Ilene Nagel, Indiana University; Dr. David Bordua, University of Illinois; Dr. James Short, Washington State University; and Dr. Marvin Wolfgang, University of Pennsylvania.

Several research assistants worked with us on various parts of the project and are owed a special note of thanks for service well beyond the going rate of pay. We acknowledge in particular the work of Huey Chen and Joseph Pereira. We have also been blessed by as able and cheerful a secretarial staff as any research project could expect. For tending admirably to the secretarial chores of the project, we thank Ms. Cindy Coffman, Ms. Jeanne Reinle, Mrs. Laura Martin, and Ms. Nancy Sturge.

Finally, we acknowledge the assistance of the following individuals who read and reacted to one or another part of this report in earlier versions: Mr. Paul Blackman, Mr. Nelson Shields, Mr. Donald Kates, and various of our colleagues at the University of Massachusetts.

Footnotes

<sup>1</sup>The annotated bibliography appears as James Wright et al., Weapons, Crime and Violence in America: An Annotated Bibliography. The other three reports in the series are:

1. Weapons and Violent Crime: Executive Summary, by James Wright and Peter Rossi.
2. Weapons Policies: A Survey of Police Department Practices Concerning Weapons and Related Issues, by Eleanor Weber-Burdin, Peter Rossi, James Wright, and Kathy Daly.
3. Effects of Weapons Use on Felony Case Disposition: An Analysis of Evidence from the Los Angeles PROMIS System, by Peter Rossi, Eleanor Weber-Burdin, and Huey Chen.

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CHAPTER ONE

WEAPONS, CRIME, AND VIOLENCE:

AN OVERVIEW OF THEMES AND FINDINGS

The United States is unique among the contemporary industrialized democracies of the world on at least two counts relevant to the topics of this book. First, there are more privately owned firearms, both absolutely and proportionally, in the United States than almost anywhere else. Evidence from several sources confirms that at least half the households in the country possess a firearm, and that the total weaponry in private hands probably numbers somewhere in the vicinity of 120,000,000 guns. There may be a few nations (such as Switzerland, Israel, or Norway) where, through the force of special circumstances and the need or requirement for an armed reserve militia, the proportional prevalence of small arms among households rivals that of the United States, but so far as a discretionary weapons arsenal among the private citizenry is concerned, the United States is, certainly, at or near the top.

The general prevalence and ready availability of small arms, America's frontier past, and the omnipresence of guns and gun imagery in our popular culture and myth have led at least one noted historian, Richard Hofstadter, to depict "America as a Gun Culture" -- a culture where The Gun plays a central symbolic role, and quite possibly, the only such culture on the planet today. One might, of course, properly quarrel with many of the details of Hofstadter's (1970) depiction, but its general thrust seems plausible enough. Where else but in the

United States, for example, would one expect to find surplus military submachine guns being marketed, in all apparent seriousness, as "The Perfect Father's Day Gift" (Sherrill, 1973)? Or 45-caliber semiautomatic carbines being advertised as "Life Insurance -- Regardless of Age an Adult Can Buy This Kind of Protection -- Paid Up for Life for \$179.00" (Smith, 1979)? Less dramatic, and rather more meaningful, evidence on the unique role of the gun in American culture can be had from Hollywood movies, American fictional literature, or the typical contents of any evening's prime-time television programming. The Gun may not constitute the very heart of American culture and civilization, but it is assuredly an important component. Whether for sport or self-defense or illicit criminal purposes, the United States is, without any reasonable doubt, among the most heavily armed private populations in the history of the world.

A second American "distinction," rather a dubious one, to be sure, is that the incidence of violent crime, and of violence in general, is also higher in the United States than almost anywhere else in the industrialized West. Unfortunately, as is well known, crime statistics in the United States are not especially reliable, and outside the United States even less so, and so it is difficult to state in precise quantitative terms just how unusual the American experience is in this regard. But there are several fragments of evidence, some quantitative, some episodic, to suggest at least the approximate magnitude.

Newton and Zimring (1969) have compiled gun homicide and gun robbery data for the United States and for England and Wales. The comparison suggests that the gun homicide rate in the U.S. may be as much as forty

times the rate in the United Kingdom, and the gun robbery rate, as much as 60 times higher (1969: 124).

In the same vein, a writer for the Montreal Star (in the issue of 8 April 1971) once compared the homicide rate in Detroit with that of Windsor, Ontario -- a "sister city" just across the Detroit River. The Detroit rate exceeded the Windsor rate by roughly 100 to 3.

Bakal (1966) reports that there were 9,250 murder victims in the United States in 1964, of whom 55% were slain by firearms; at present, the numbers of homicides and gun homicides per year are about twice or more the 1964 figures, and the proportion of homicides committed with firearms appears to be increasing. In sharp contrast, in the same year, Japan had 37 gun homicides from a total of 1,469 (3%); Britain, 29 of 309 (9%); Canada, 92 of 266 (35%); Belgium, 9 of 53 (17%); Denmark, 6 of 23 (26%); Sweden, 5 of 86 (6%); the Netherlands, strikingly, had no firearms homicides at all over a three year period. More recent compilations of international comparative data (e.g., Curtis, 1974) show essentially the same results. The idea of putting one's fellow citizens to death, and using firearms to do it, seems rather more widespread and firmly established in the United States than in any other advanced industrial civilization.

More recently, a well-known pro-gun-control pamphlet, entitled A Shooting Gallery Called America, observes, "The United States has more gun deaths every year than any other country in the world. In fact, the total number of gun deaths in all other nations is exceeded by the number of gun deaths in the United States alone. Furthermore, not only does the rate of American homicides and accidents by firearms

far surpass that of every Western European nation, but it is also higher than those of the 'frontier' countries of Canada and Australia."

To be sure, none of these international comparisons can be taken strictly at face value. Aside from differences in the completeness and reliability of the crime data, the nations being compared also differ in history, culture, and tradition, in ethnic and socioeconomic composition, in the rates of private weapons ownership and the legislation that governs such ownership, in the customary patterns of sentencing for persons committing gun crimes, and in hundreds of other ways that make straight nation-to-nation comparisons misleading. But the general lesson to be drawn from such comparisons is much less ambiguous and is generally unassailable. As Newton and Zimring (1969: 123) summarize, "most industrially developed Western nations experience far lower rates of gun crime than the United States."

What is the relationship, if any, between these two "distinctions," or in other words, between the general availability of small arms and the rates of crime and violence in the United States? This question has been the object of much intense political debate and speculation, most of it white-hot. It has also been the object of at least some credible empirical research, although it must be confessed that the debaters and speculators are several times more numerous than the researchers. Such research as has been done on weapons, crime, and violence in the United States constitutes the subject matter of this volume.

More specifically, our purposes are two-fold. First, through a detailed and critical review of the existing literature on weapons, violence, and crime, we come to some assessment of what is currently known with at least some certainty about these topics. This review is contained in Chapters Two through Fifteen, following. And secondly, a natural extension of the first, we note what appear to us as the most serious gaps in present knowledge and propose a series of studies (a research agenda) that would begin to close them. The research agenda appears in the concluding chapter, Chapter Sixteen. The overriding purpose of the volume is thus to "take stock"--to assess what is now known about weapons, crime and violence, what is not known but should be, and what further research is needed to advance knowledge in this field.

We have defined the topics of this study -- weapons, crime, and violence -- in the broadest possible terms, and thus, our review ranges over a rather wide territory, touching at many points on themes that appear only marginally relevant to the more narrowly conceived issue of the uses of weaponry in the commission of violent criminal acts. Our hope was to achieve breadth of coverage, even at the expense of exhaustive detail on some technical points. It would be presumptuous in the extreme for us to suggest that we have covered every piece of research in the published literature, but we do claim to have covered at least the most important studies in all aspects of the "guns, crime, and violence" area.

In general, one would be ill-advised to point to the academic literature on weapons and crime as an example of the "scientific objectivity" that is discussed in introductory methods textbooks. Both "guns" and "crime" are emotionally-laden symbols that evoke strongly held and not always rational feelings, anxieties, and concerns, and researchers are not exempt from such evocations. Further, what to do about "guns" and how to deal with "crime" are hardy perennials on the nation's political agenda, and thus, something of potentially overriding policy importance is at stake in every piece of research on these topics. Almost everyone has some opinion about guns and crime, and certainly, the people who spend their professional lives doing research on guns and crime are no exception. Thus, many (perhaps all) researchers in this area bring with them to the research task a set of previously-held personal beliefs and political ideologies which, if they do not destroy outright the credibility of the research, at least sometimes interfere with sound research judgments.

When we first undertook this literature review, our intention was to avoid, to the extent possible, the polemical literature and deal only with serious, credible, objective research. What we have found is that virtually all of this literature is polemical to some extent, if not by intention then certainly in effect. As in Harlan County, "there are no neutrals here."

What accounts for the generally polemical tone that one finds in this literature? There are a number of sources, not

all of them entirely avoidable. First, here as in all other areas of scholarship, people are drawn to particular research topics because they have some personal stake in them. These personal stakes have an influence on what aspects of the topic are selected for study, which pieces of the assembled evidence get more or less emphasis, what policy implications are drawn out of the results. To cite one obvious example, there are at least 100 million firearms in private hands in the United States today. Depending on one's outlook in these matters, this demonstrates quite conclusively either (i) that there is an obvious, self-evident and immediate need for some sort of control over this vast supply of arms; or (ii) that the vast supply of arms already in private hands renders futile any governmental control efforts. Thus, proponents of stricter controls can cite the sheer numbers of guns around as evidence that "something must be done," and opponents can cite the same numbers as evidence that "nothing can be done." Which of these conclusions is the "right" one, of course, does not depend at all on the numbers themselves but on the implications one is willing to draw from them, and the implications one is willing to draw seem as much the result of a priori beliefs as anything else.

Also, even when the producers of knowledge are relatively neutral and objective, the consumers and users of that knowledge typically are not. In the "Great American Gun War," as Bruce-Biggs (1976) has described the American firearms policy debate, the lines of battle are sharply drawn and no love is lost among

the contestants. Leading the anti-control faction is the Institute for Legislative Action, principal lobbying arm of the National Rifle Association, which is often described, not without some justification, as the most powerful political lobby in Washington today. From the pro-gun point of view, the advocates of stricter gun control are seen to be mostly bleeding heart liberals and pointy-headed bureaucrats whose intelligence, manhood, and respect for citizens' rights, are all open to some question. The pro-control faction is rather more dispersed and consists of perhaps a score or more of organizations working for some aspect of stricter gun control. And from their point of view, the pro-gun organizations and the private gun owners they represent are demented and blood-thirsty psychopaths whose concept of fun is to rain death upon innocent creatures, both human and otherwise. Polarization at the extremes, of course, has made it difficult for a responsible center to form. The extremists on either side are always willing (and, more often than not, able) to append a polemical interpretation to a research finding, even when the researchers themselves have not. Thus, researchers often find themselves aligned on one or the other side of the issue, whether they intended to take a stand or not.

Then too, proper national policy with respect to firearms and crime has long been an open political question, and no capable researcher in the area could possibly fail to notice the potential policy implications of his or her research, most of all in an era of declining research monies where it has come to be expected that research generate "policy relevant" results. In the haste to say

something of relevance to policy, of course, the bounds of good science, as well as good taste, can be quickly exceeded.

Yet another problem, possibly more tractable than the ones just discussed, is that there is very little in the weapons, violence, and crime literature that would qualify as hard empirical fact. Solid, nationally-representative evidence on any relevant topic is rare or non-existent. As such, the literature is dominated by small-scale state and local studies, with the ensuing unavoidable disarray of contradictory findings and results. At the present, we do not know the total number of privately owned firearms in the United States except to the nearest few tens of millions, and we have even less knowledge of the kinds of firearms in private hands (except for the rough distribution between handguns and shoulder weapons), how they are used, why they are owned, how long they last. Such fragments of knowledge as we do have on these topics are almost invariably derived from studies in a single community or, on occasion, a single state, and their implications for the nation as a whole are therefore uncertain.

In the same vein, our knowledge of crime and violence is substantially worse than would be ideal. Here too, small scale state and local studies predominate, and the national data that do exist are beset with various problems. For example, we do not know for certain just how many violent crimes are committed in the United States in any given year. From the FBI's Uniform Crime Reports, we can get the approximate numbers of violent crimes known to the police, but we also know from surveys of

criminal victimization that crimes reported to the police are only a fraction of all crimes actually committed. The proportion of these crimes committed with firearms and other weaponry, the proportion committed by previous weapons offenders, the proportions planned and premeditated vs. the proportions unplanned and spontaneous, even the fate of persons convicted of weapons crimes in the courts--none of these matters are known with any certainty at all for the United States as a whole. And the smaller scale state and local studies that have been done often reach sharply contradictory findings.

The disarray of single-city or single-state studies has an immediate, if obvious, implication, namely, that with a sufficiently diligent search, the committed advocate can always find at least one study somewhere with a finding consistent with his or her point of view. To an outsider, this implies that researchers only "find" what they want to find. In truth, all it implies is that what is true in, say, Detroit is not necessarily true in Washington or St. Louis or Los Angeles, much less true of the nation as a whole.

And, of course, even when there is some consensus on the facts themselves, there is typically little or no agreement on their meaning, significance, or correct interpretation. To cite an example considered in great detail later in this report (see Chapter Eleven), it is an agreed-upon fact that attacks with a firearm lead to the death of the victim more frequently than attacks with another weapon, such as a knife. There is some

disagreement on the precise magnitude of the lethality differential; depending on the study, gun attacks are reported to be between 1.8 and 6 times more lethal than knife attacks. But what does this difference mean? To what conclusion does it lead?

One possibility, favored by the pro-control faction, is that the gun is intrinsically the more lethal weapon, that many victims die not so much because anyone intended them to but rather because the weaponry at hand -- a gun -- is an efficient killer whereas alternative weaponry is less so. If this is the correct interpretation, then the implication is obvious: if there were fewer guns, there would be fewer homicides.

The alternative possibility is that murderers choose guns precisely because they are determined to bring death to the victim, and that assaulters choose knives or other alternative weaponry precisely because they do not intend to kill, only to injure. The lethality difference across weapons is, in this view, a result of underlying differences in intention or motivation; or in short, the truly determined and earnest killers choose guns. An implication of this view, then, is that the lethality differential is not a property of the weapon but is inherent in characteristics of the offenders, and that the people who currently kill with firearms would, given their intent, find other ways to accomplish the same end if no guns were available to them. And if this is the correct interpretation, then the implication is again obvious: reductions in the availability of firearms would leave the homicide rate largely unaffected.

In the same vein, hardly any responsible observer would want to quarrel with the two observations made at the beginning of this chapter -- that there are more guns, and more gun crime, in the United States than in most other advanced societies. But what implication can be drawn from these observations? One popular interpretation is that there is a very obvious causal connection here, that we have more gun crimes precisely because we have more guns, and that if fewer guns were available, fewer crimes would be committed with them. But by the same token, the fraction of all privately owned firearms that are involved in any sort of criminal activity in any given year is on the order of a fraction of one per cent, and so it is certainly possible that outright confiscation of 99% of all private firearms in the country would still leave the rate of gun crime unaffected, especially were one to assume, not unreasonably, that the criminally-abused 1% would be the last weapons affected by any gun policy. Thus, one can note and accept that the U.S. is among the world leaders both in weapons owned and in crimes committed with firearms and, on that basis alone, conclude either (i) that the need for stricter weapons controls is self-evident and would reduce the rate of violent crime, or (ii) that trying to solve the problem of violent crime through restrictions on the general ownership and use of firearms would be ridiculous -- equivalent in all important respects to trying to solve the problem of accidental drownings by legislation to prohibit swimming.

To be sure, neither of these "conclusions" is at all self-evident. For example, that the number of guns greatly exceeds the number of

gun crimes does not, in itself, rule out the possibility that the general availability of guns is an important cause of gun crime, any more than the fact that there are many more smokers than lung cancer cases rules out smoking as a cause of cancer. At the same time, that there are more guns and more gun crimes in the U.S. than elsewhere does not prove that guns are an important cause of crime (or that crime is a cause of gun ownership); in fact, the correlation itself has no direct causal implication at all, since the U.S. might well be high on gun ownership for one reason, and high in criminal violence for entirely different reasons. To cite the evidence on numbers of guns owned and numbers of violent crimes committed with guns in support of either conclusion is to affirm only that one was committed to a conclusion before the research began.

Given the ~~uncertainties~~ of the facts themselves and the inherent ambiguities of their meaning or interpretation, it follows that much research on weapons, violence, and crime amounts in substantial part to the construction of images favorable to this or that point of view. There is, first of all, the imagery associated with "the criminal." One prominent image, typically identified with liberal or progressive theories of crime, is of the criminal as victim, driven to criminal acts by the racial and social injustices of the larger society and prone to violence not because of inherent meanness or innate brutality but simply because, in a moment of passion or desperation, the instruments of violence were at hand. Given this imagery, the solution to criminality is obvious: in the long run, one must solve the injustices that give rise to crime; in the short run, one rehabilitates

the offender (thus compensating for the social injustice) and, to the extent possible, reduces the availability of the means by which violence is perpetrated.

An alternative image, associated with more traditional or conservative theories of crime, depicts the criminal as a rational economic actor, one who commits criminal acts primarily for economic gain. In this view, weaponry and its use are just tools of the trade; one is a more efficient criminal when armed than when not; violence is committed only because it increases the daily take. A corollary is that the person who is intent on arming himself or herself for criminal gain will always find a way to do so; as many have pointed out, a serviceable firearm can be made from nothing more than a piece of pipe, a block of wood, a nail, and a box of rubber bands. The inevitable implication of this image, of course, is that reducing the general availability of private weaponry would have little effect, either way, on the incidence of violent crime. Indeed, in one version, reductions in private armament would deprive the citizenry of an effective and potent crime deterrent.

So too with images of "the gun." In the minds of many, "the gun" symbolizes all that is wrong in American culture: it symbolizes male dominance, sexual frustration, aggression, violence, and a host of other pathologies that are offensive to a civilized society; in this view, the gun is blood lust incarnate. But in the minds of many others, the same "gun" symbolizes all that is right in the culture: it symbolizes manliness, independence, self-sufficiency, outdoorsmanship, a willingness to die for one's beliefs; in this view, the gun

is the virtual embodiment of traditional American values.

This sort of starkly opposed imagery is rife throughout the literature reviewed in the following pages. In many accounts, for example, weaponry is seen as an important stimulus to the commission of violent acts, while in other accounts, private weaponry is seen as an important deterrent to much of the violence that would otherwise take place. Some studies argue that gun crime is a very substantial part of the total crime problem in the United States; others argue that gun crime is effectively trivial. In some accounts, the "typical" private gun owner is depicted as a virtual psychopath, and in others, as an upstanding and respectable middle class citizen. To some, the various shooting sports are at worst harmless diversions and at best affirmations of man's relationship to nature, while for others, these same activities represent an acting out of our most regressive, infantile, and violent fantasies.

The emotive imagery and strong ideological predilections common to the weapons and crime literature quite probably mean that the many scholarly and policy issues inherent in this topic are not going to be put to rest through any sort of empirical research, no matter how sound or well-conducted. Too much of what is at issue involves total world-views; relatively little involves factual matters that could be adjudicated through research. It would thus be foolish to think that one might go through this literature refereeing among the various contenders, doling out penalties for fouls against scholarly standards, and announcing a winner at the end of the contest,

and such is not our purpose here. Our hope, rather, has been to sift through the competing claims and assertions, noting those that have been (or could be) researched, and gleaning from the material those few facts and relationships that appear to have been solidly established. We are quite confident this review will not put any end to the weapons and crime debates, nor should it, but we do hope that it elevates the whole discussion to a somewhat higher empirical plane.

Our review begins with an assessment of what is presently known about the existing stock of private armament among the U.S. population. Chapter Two, "How Many Guns in Private Hands?," compiles the existing empirical estimates of the total firearms supply and attempts to reconcile the apparent contradictions among them. In general, two methods have been used to estimate the total firearms supply: compilations of production and import data, and estimates generated from national surveys containing a weapons ownership question. Both methods are intrinsically problematic for one or another reason: the first, for example, requires that we know the rate at which firearms are removed from use, and there is no evidence in any source on this rate. The second, likewise, is hobbled by all the usual infirmities of survey research, plus a possibly large response bias resulting from the unwillingness of respondents to admit to weapons ownership.

Although much is made in the literature of the apparent "disparity" in estimates generated by each method, reconsideration of the several assumptions that go into each estimate, and the appropriate recalculations, show that both methods tend to converge

on common values for the total number of weapons possessed. In 1968, we estimate, there were roughly  $80 \pm 20$  million guns in private hands, and by 1978, the figure was roughly  $120 \pm 20$  million guns. In both years, handguns account for 25-30% of the total weaponry, and shoulder weapons for the remainder.

The estimates of Chapter Two thus confirm a common speculation in the literature, that the total number of weapons in private hands has sharply increased over the past decade(s). In Chapters Three to Five, we consider several possible sources of this trend.

Given about 80 million guns in 1968, and about 120 million in 1978, our best estimate of the total weapons increase is on the order of forty million guns, although, given the large uncertainties in the estimates for both years, the true increase could fall anywhere between zero and 80 million. The proportional increase in handguns was distinctly sharper than the increase in shoulder weapons.

Chapter Three, on "Sport and Recreational Demand," refines the estimates of the trend and corrects the trend figures for simple growth in the numbers of U.S. households. In 1968, there were about 60 million households in the United States, and in 1978, about 75 million -- a 25% increase. Calculations undertaken in Chapter Three show that this increase in the number of households alone accounts for approximately half the total increase in weapons owned. Thus, once this factor has been taken into account, there remain some 20,000,000 excess "new" weapons to be accounted for by other factors. Additional calculations suggest that about 10 of these 20 million

are handguns, and the remainder are rifles and shotguns.

Chapter Three then considers what proportion of the remaining "new" guns can be ascribed to enhanced sporting and recreational demand for firearms. Although the data are rather spotty at best, our estimates suggest that, at the outer limit of plausibility, growth in sport and recreational firearms demand accounts for all the remaining excess weapons, handguns and long guns alike. Rather less liberal assumptions about the rate at which "new" hunters and other shooting sportspersons arm themselves suggest, as a more likely possibility, that the growth in this source of firearms demand accounts for all (or nearly all) of the growth in shoulder weaponry, and roughly a third to a half of the growth in handguns as well. The chapter thus compiles some evidence against the common claim that handguns have "no legitimate sport or recreational" use. Contrasting that claim, some of the evidence presented in the chapter suggests that handguns are as likely to be owned for sport and recreation as they are to be owned for protection or self-defense.

Chapter Four considers another possible source of enhanced arms demand, one that has received little or no attention in the literature, namely, growth in "The Police Demand for Armament." Again, the data are spotty and inconclusive, but evidence from several sources suggests a rather large increase in the total number of armed public servants over the period 1968-1978, one possibly amounting to as much as a quarter-million new police officers. There has apparently been a parallel increase in private security forces as well. In addition to these trends in the number of armed personnel, there is much fragmentary and episodic evidence to suggest considerable police department

experimentation with new small arms policies in the decade. Both the personnel trend and the arms policy trend pose the possibility of a rather sharp increase in police small arms purchases over the decade. The evidence and speculations compiled in the chapter suggest that the total police demand for new arms in the decade amounted to perhaps 2-3 million handguns and some unknown number of shoulder weapons. Subtracting these figures from the numbers of unexplained guns remaining at the end of Chapter Three, we are left with no more than about 5 million handguns, and essentially no shoulder arms, to be accounted for by other factors.

In Chapter Five, we assess the most commonly offered explanation for the private arms buildup, that it has resulted from "fear of crime, violence, and civil disorder" (Newton and Zimring, 1969: 21). There are several compelling reasons to believe, despite many claims to the contrary, that "fear and loathing" have actually been the underlying motive in only a relatively small fraction of all recent firearms acquisitions. First, once household increase, new sport and recreational demand, and enhanced arms demand among the police have been taken into account, there are few or no excess weapons remaining to be explained. Secondly, an analysis of available survey data on handgun ownership from 1959 to 1976 shows that the increase in proportional handgun ownership was concentrated mainly in middle-sized cities, whereas the surges of "crime, violence, and civil disorder" were mainly big-city phenomena. Other considerations advanced in the chapter suggest that much (perhaps all) of the "domestic arms buildup" has resulted

from additional weapons purchases among families already owning one or more guns (rather than first-time purchases by previously unarmed families), or in other words, that there has been an increase in the average number of weapons owned among families owning at least one of them.

Several studies have inquired directly into "fear and loathing" as sources of the recent arms trend; and none of them demonstrate a clear or decisive "fear and loathing" effect. Some studies claim to provide evidence for this effect, but the assembled data are consistent with equally plausible alternative explanations; and most studies, especially the methodologically more sophisticated ones, show little or no support for "fear" as a factor in the trend. For example, one time-series analysis concludes, "the strong upward trend in handgun sales cannot be explained by...rising violent crime rates" (Clotfelter, 1977).

Altogether, the analyses in Chapters Three to Five suggest little support for the idea that the recent domestic arms buildup has been in reaction to crime, violence, or civil disorder, and considerable reason to believe that the trend has had other sources entirely, most relatively benign from the larger societal viewpoint.

Chapter Six reviews the available evidence on "Characteristics of Private Weapons Owners." By far the largest share of private weaponry is owned primarily for sport and recreational uses; evidence from several sources suggests that sport and recreational guns outnumber protection guns by about 3 to 1. Weapons ownership varies sharply by region and city size, being higher in the South and West

than in other regions, and sharply higher in rural than in urban places. Contrary to a common speculation, gun ownership also tends to increase with social status, being higher in the higher income categories. Also, for reasons that have not been adequately explained, Protestants are sharply more likely to own a gun than either Catholics or Jews; and men are, of course, much more likely to own a gun than women. There does not appear to be any consistent racial variance in weapons ownership.

Some authors have ascribed the higher rate of weapons ownership in the South to a presumed "regional subculture of violence." A review of several relevant studies provides no compelling empirical support for the "subculture of violence" hypothesis.

There is substantial evidence from several sources that early parental socialization is an important factor (possibly, the most important factor) in weapons ownership among adults. In all studies to have inquired into the matter, whether one's father owned a gun is the single best predictor of whether the respondent owns a gun. This finding strongly suggests that the modal or typical adult firearms owner has had experience in the use of small arms stretching back well into childhood.

One study based on data for Illinois (Lizotte and Bordua, 1980) allows for a differentiation between sport and defensive weapons owners; their data suggest that these are qualitatively different types. Sport ownership is largely a function of early socialization, as suggested above; other than income and sex, the only strong predictors of sport ownership are parents' gun ownership and the age at which the

respondent first acquired a gun. Ownership of a gun for protection, however, is entirely different; the only significant predictor is the violent crime rate in the county where the respondent resides.

There are a few (but only a few) studies that have looked at personality differences between owners and nonowners; none of them show gun owners to be an especially distinctive group.

In general, the review contained in Chapter Six supports the depiction that the "average" gun owner is a small town or rural middle class Protestant male who owns a gun primarily for sport and whose interest in and familiarity with firearms results from early childhood socialization.

Chapter Seven, "On Crime and Private Weapons," considers whether there is any demonstrable causal relationship between private weapons ownership and the rates of criminal violence. In general, three hypotheses are considered: (i) private firearms as a cause of crime, (ii) private firearms as an effect of crime, and (iii) private firearms as a deterrent to crime. The chapter also reviews some recent survey evidence on the actual uses of private firearms in self-defense.

The existing research on all three hypotheses is highly inconclusive. There are serious logical, and methodological, barriers that, in essence, prevent any decisive test; these issues are reviewed in the beginning of the chapter.

There is some, but not much, evidence to suggest that at least some fraction of private firearms are purchased in reaction to crime: most are purchased for entirely different reasons, and at least some

of the weapons purchased for "defense" are used to defend against animals rather than other people. Evidence from several sources confirms that the criminally victimized are not any more likely to own a firearm than the nonvictimized, and there is further evidence to suggest that fear of crime is also not a very important factor. One study that allows a differentiation between sport guns and protection guns reports that the violent crime rate is the only significant predictor of protective gun ownership. The general thrust of findings in this area, however, is that crime or the fear of crime is at best a minor factor in the ownership of most private firearms.

Although there is much speculation, surprisingly little empirical research has been done on firearms as a cause of criminal violence. Most of the studies in this area depend on gross comparisons of crime and weapons ownership rates across large and heterogeneous geographical aggregates (nations, regions, states, or counties) that differ in far too many (typically uncontrolled) ways for much of substance to be concluded from the results. Truly decisive evidence--for example, evidence on the ensuing criminality of persons who acquire firearms--does not exist.

As an example of the difficulties encountered in this area of the literature, much is often made of the fact that the rate of private firearms ownership and the rate of violent crime (especially, homicide) are higher in the South than in other regions of the country. Newton and Zimring (1969) were among the first to point this out, and

the result is widely cited in subsequent literature as evidence that guns cause crime. In fact, this regional correspondence in crime and weapons ownership says little or nothing about private firearms as a cause of crime, for the following reasons:

(i) The distinctiveness of the South in weapons ownership is due almost entirely to the high rate at which shoulder weapons are owned there. The ownership of handguns, in contrast, is not very much more prevalent in the South than in other regions. And yet, the largest share of violent crimes committed with firearms are committed with handguns. Reference to the evidence on the South, in essence, links homicide (and other violent crime) with the disproportionate ownership of a class of firearms seldom used in homicide (or other violent crime), a tenuous link at best.

(ii) In the same vein, in the South as in all other regions, weapons ownership is highest in rural and small town areas, whereas criminal violence of the sort at issue here is concentrated in the larger cities. It is likewise tenuous to attribute urban crime to the possession of weaponry in small town and rural areas, but this attribution is also directly implied in the regional comparison being discussed.

(iii) There is persuasive evidence that the high rate of criminal violence in the South is due mainly to the lower prevailing socioeconomic conditions of the region. The higher rate of weapons ownership, in contrast, is probably linked to early socialization of Southern males and to higher opportunities for the sporting uses of guns. The regional correlation between guns and crime, that is, may well be simply fortuitous and cannot, in any case, be taken as evidence that private firearms are a cause of criminal violence.

Other evidence, derived from other kinds of research designs, has also been presented in the literature to show that guns are a cause of crime, but none is any more conclusive than the regional evidence just discussed. We conclude from the review that there is little or no conclusive, or even suggestive, evidence to show that gun ownership among the population as a whole is, per se, an important cause of criminal violence.

Whether private firearms are an important deterrent to crime is likewise uncertain. Again, certain logical and methodological difficulties prevent a firm or conclusive estimate of the rate at which crime is deterred by firearms possession among real or potential victims. It is clear that much crime occurs in circumstances where the victim's ownership of a gun would be irrelevant: for example, street crime (most of which occurs while the victim is away from his or her firearms) or the burglary of unoccupied residences (which occurs when there is no one home to use a firearm). But these facts say nothing about the effectiveness of weaponry as a deterrent to crimes occurring in situations where they are potentially deterrable.

There is some evidence that the risk to a home robber or to a burglar striking an occupied residence of being shot and wounded or killed by the intended victim is on the same order of magnitude as the risk to the same criminal of being apprehended, convicted, and imprisoned for the crime (both probabilities appear to be on the order of 1-2%) (Kleck, 1979b). It is thus plausible that much crime is "deterred" because those who would otherwise commit it fear the possibility of being shot in the process, just as it is plausible that the fear

of doing time for one's offense also prevents some crime.

Evidence on the uses of firearms by victims in crimes that are potentially deterable suggests that the probability of a "successful" victimization goes down, but the probability of injury or death to the victim goes up, if one uses a gun in protection.

Chapter Seven concludes with a review of existing evidence on the actual uses of firearms in self-defense. Roughly 25% of the total private armament appears to be owned primarily for protection or self-defense, and some 40-50% of all handguns are owned primarily for this purpose. Survey evidence for 1978 shows that some 15% of the population (or members of their households) have used a gun in self-defense at some point in their lives, of which about half was in defense against animals. It also appears that about 7% of the nation's adults carry handguns with them for protection outside the home. The proportion of US adults who have actually fired a gun in self-defense appears to fall somewhere between two and six per cent.

Chapter Eight, "How Much Crime? How Much Violence?," shifts attention away from the ownership of firearms among the general population and towards the criminal uses and abuses of guns and other weapons. Although the definitions of "violence" and "criminal violence" are themselves problematic, and the available data generally unreliable and incomplete, the FBI's annual Uniform Crime Reports and the several criminal victimization surveys

provide the broad outlines of the problem of crime and violence in the society.

UCR data for the index crimes of homicide, robbery, and aggravated assault all show the same general overtime pattern: namely, fairly sharp increases from the early sixties up through the early seventies, a peak in the rates occurring in about 1974 or 1975, and small declines in the years since (through 1978). For example, between 1960 and 1978, the homicide rate increased from about 5 to about 9 homicides per 100,000 population. The percentage of homicides committed with firearms also increased, from 53% to 63%. Of the homicides committed with firearms, approximately three-quarters involve handguns.

In the same vein, the total number of robberies of all types increased roughly four-fold over the two decades. Of the total robberies occurring, somewhere between three-fifths and two-thirds are armed robberies. Among the armed robberies specifically, about 60-65% involve a firearm, and the remainder are committed with knives or other weaponry. There appears to have been some increase in the percentage of all robberies committed with a firearm: in 1967, about 36% of all robberies were done with a gun, and in 1974 about 45%.

The trend in aggravated assault is similar, the number of such assaults having increased approximately three-fold from 1960 to 1978. Proportionally, only a few aggravated assaults are committed with firearms, although this percentage has also apparently risen. In 1964, for example, about 15% of all aggravated assaults involved

a gun, and in 1978 about 22%.

Comparisons of these UCR data with evidence from the criminal victimization surveys are hazardous for several reasons, all of them reviewed in Chapter Eight. In general, the victimization data suggest that between 25% and 50% of all criminal incidents are unreported to the police, with the percentage unreported varying by the seriousness of the crime. The victimization surveys also suggest that about 10% of all criminal incidents qualify as "violent crimes," that is, are crimes against the person, while the remaining 90% are property crimes; these proportions accord reasonably well with the proportions estimated from UCR data.

The trend in the suicide rate is also up over the past two decades, although not so sharply as the trends in other violent crimes such as homicide. In 1960, there were about 20,000 suicides, and in 1977, about 30,000. The percentage of suicides committed with firearms also appears to have increased somewhat over the same time span. Trends in attempted suicide, or in the proportion attempted with a firearm, are intrinsically unknowable, although there seems to be some consensus that there are perhaps 8 to 10 attempted suicides for every successful one.

Chapter Eight also reviews evidence on death from firearms accidents; as a percentage of all accidental deaths, deaths from firearms accidents have been more or less stable, hovering around 2%, for as long as data have been collected. Of the total accidental firearms deaths, about 40% are due to hunting accidents.

Data on accidental firearms injuries are extremely unreliable, owing to the (presumably) large fraction that are unreported, and as a result, published estimates of the annual number of such injuries vary widely (between tens and hundreds of thousands). Our best guess for 1975 (the reference year in this analysis), based on data from the National Health Surveys, is about 170 ±75 thousand injuries due to firearms accidents, which is roughly one-thirtieth the number of injuries sustained from "cutting and piercing" instruments.

Taking all sources of firearms deaths for the reference year of 1975, the most recent year for which reasonably complete data are available, we estimate that something on the order of 30,000 deaths occur annually as a result of the criminal, accidental, and suicidal uses of firearms. We further estimate, for the same year, that there were approximately 900,000 additional "incidents" where firearms were either present, brandished, or fired in criminal incidents, or where firearms were involved in injury-producing accidents, or where firearms were used in attempted suicides, or where firearms were involved in citizen-police encounters. We thus estimate, as a reasonable first approximation to the correct order of magnitude, an annual total of roughly one million "gun" incidents -- i.e., incidents where a firearm of some sort was involved in some kind of violent or criminal incident (whether intentional or accidental, whether fired or unfired, whether fatal or not).

The preceding estimates are useful indicators of the approximate magnitude of the overall "guns, crime, and violence" problem in the United States, but we emphasize that they are approximate indicators only. We have taken 1975 as the reference year in the analysis because

it is the most recent year for which complete data covering all relevant topics are available. More recent data, however, suggest that the years 1974-1975 were "high points" for gun violence over the previous decade. Further, these estimates include large numbers of "incidents" that are in no sense chargeable gun crimes: they include an estimate of accidental injuries resulting from firearms (which is known very unreliably) and they include estimates of suicides attempted with firearms (which is also known only very unreliably). As a precise number, our estimate -- one million annual gun "incidents" -- cannot be taken seriously. A more appropriate phrasing of the results would be that the total number of gun "incidents" of all sorts in any year falls somewhere in the range of 100,000 to 1,000,000 incidents, and in all probability, somewhere towards the upper end of that range.

Chapter Nine, "Crime and Violence: Victims and Offenders," reviews the existing evidence on characteristics of the perpetrators and victims of these approximately one million annual "incidents." Young males are by far the most likely victims of accidental firearms violence: among males aged 15 to 24, for example, firearms accidents are the third leading cause of accidental death (after automobile accidents and drowning). Men are also substantially more likely than women to commit suicide with a gun; in 1975, for example, 62% of all male suicides, but only 36% of the female suicides, were committed with a firearm.

For firearms crimes, young non-white males are by far the largest offender category. Crimes against property are especially concentrated in the younger age groups, crime against the person

(that is, "violent" crimes) less so. Non-whites are greatly over-represented among all categories of offense, but more so for "violent" crimes than for property crimes. In 1975, about 57% of all homicides and nonnegligent manslaughters were committed by nonwhites; in the same year, nonwhites constituted about 13% of the population.

Multiple offenders are common in many criminal incidents; according to the criminal victimization surveys, the proportion of victimizations involving more than one offenders varies from a low of 22% for rape and attempted rape, to a high of 62% for robbery with serious assault.

With the exception of homicide and some categories of aggravated assault, most criminal incidents involve persons unknown to each other before the event. Robbery is especially likely to involve strangers, assault less so. Interestingly, women are much more likely than men to be assaulted by people they know; assaults against men more commonly involve a stranger.

The probability of being victimized by crime varies by sociodemographic characteristics. The highest probabilities are for young males, and the lowest, for elderly women. In general, the best predictor of victimization is age, followed by sex. Marital status is also of considerable import, with the single, divorced and separated more likely to be victims.

The probability of suffering injury in the course of a crime likewise varies by sociodemographic characteristics. Again, young males are the highest risk group. A common finding in several

studies is that the probability of suffering injury increases if the victim takes self-protective measures of any sort.

Finally, the probability of suffering property loss is also conditioned by social characteristics. The poor are about twice as likely to suffer a property-loss victimization as the more affluent; likewise, nonwhites are much more likely to suffer such a victimization than are whites.

Chapter Ten shifts attention from the characteristics of persons involved in crime to "The Firearms Used in Crime." Remarkably, there are no nationally representative data available on the weapons used in violent crime, with the partial exception of homicide. Such evidence as exists is thus taken, almost without exception, from small-scale studies in a single community or state.

A key issue in Chapter Ten is whether "crime guns" are sufficiently distinct from legitimate firearms owned by law-abiding citizens to allow for special legislative focus on the former. It is not possible to answer this question at the present time for two reasons: (i) except for the rough distribution among handguns and long guns, virtually nothing is known about the characteristics of legitimate guns in private hands (for example, the preferred calibers, barrel lengths, age, cost, and so on); and (ii) even less is known about the weapons used in crime. Whether "crime guns" are, in general, different than legitimate guns obviously cannot be answered until more is known about both types of firearm.

Evidence from several sources makes it clear that the handgun is the preferred firearm in most crimes involving firearms. Based on evidence from the most generalizable study in the literature, we estimate that in 1971 (the only year covered in this study), some 260,000 firearms were confiscated by state and local police, and of these, about 70% were handguns. Other studies report handgun percentages in the same range. Thus, the criminal use of guns involves largely handguns (although it is also important to remember that about a third of all "crime guns" are shoulder weapons).

Several studies have tried to estimate the proportion of "Saturday Night Specials" contained among the "crime gun" category. Unfortunately, the very definition of Saturday Night Special is highly ambiguous, and so the question cannot be answered definitively. Results from several of these studies confirm that concealability is an important factor in "crime guns," but concealability is only one among several variables implied in the concept of Saturday Night Special.

Most studies of "crime guns" suffer from the absence of a proper comparison standard, namely, empirically reliable information on non-crime guns. Brill (1977), for example, notes that expensive firearms were as common in his sample of crime guns as inexpensive firearms, and uses this finding to argue against the common idea that most crime guns are cheap Saturday Night Specials. But the distribution by "quality," "price," or "value" among crime guns themselves is relatively uninformative unless one also knows the corres-

ponding distribution among non-crime guns. (For example, if half of his sample were cheap SNS's, but only a tenth of all private handguns were of the same sort, then his finding would support the idea that cheap SNS's are over-represented among the firearms used in crime.)

Evidence that concealability is a major factor distinguishing crime from noncrime guns comes from several sources. First, handguns predominate among crime guns, whereas shoulder weapons are by far the more common firearm among the larger population. Secondly, in all studies reporting evidence on the matter, some 70-75% of all crime handguns have barrel lengths of 3 inches or less, that is, are of a size that makes them readily concealable. Finally, in the one study reporting evidence on the issue, slightly more than a third of the confiscated shoulder weapons had been modified to shorter barrel lengths. (In contrast, there is no evidence to suggest that criminals prefer smaller caliber guns than does the gun-owning population at large, nor is there evidence that criminals prefer "cheaper" weapons.)

Handguns confiscated and traced are often found to have crossed state lines before having been used in a criminal incident. This is especially true of guns confiscated in jurisdictions with relatively more restrictive gun regulations. Obviously, the flow across jurisdictional lines of firearms into criminal hands tends strongly to vitiate the effects of jurisdiction-specific gun control measures.

Stolen handguns apparently contribute substantially to the potential supply of crime firearms. Based on 1975 statistics and

a few assumptions, we estimate that some 275,000 handguns are stolen from private residences each year. To this total, one would have also to add thefts from dealers, manufacturers, importers, and so on. To be sure, not all stolen handguns eventually end up in criminal hands. Many, we presume, go the route of much other stolen property -- that is, they are "fenced" and then sold through various outlets to the general private firearms market. It is an interesting (and, so far as we can tell, largely unresearched) question whether the proportion of stolen firearms among "crime guns" is any higher than the proportion among the legitimate private firearms stock.

Several studies also confirm that crime guns tend to be relatively "young" guns. About one-half of all confiscated handguns prove to have been manufactured in the previous three to five years. How this compares with the age distribution of legitimate handguns owned by the population at large is, of course, completely unknown.

Chapter Eleven, "On the Matter of Criminal Motivations," reviews existing evidence on the widely-held view that much homicide, and criminal violence in general, does not result so much from initially lethal intent as it does from escalations of otherwise relatively petty quarrels that become lethal or injurious simply because firearms are available. The basic issues involved were discussed briefly earlier in this chapter: essentially, the issue is whether there would be less criminal violence if there were fewer guns.

Here as in most other areas of the literature, the available research is highly inconclusive. The evidence is firm that

attacks with a gun lead to the death of the victim some 2 to 6 times more often than attacks with knives. This might imply that guns are intrinsically more lethal (in which case their restriction might lower the homicide rate), but it might only imply that people who are intent on bringing death to their victim preferentially choose firearms as the means (in which case firearms restrictions would not lower the homicide rate). Nothing in the literature allows one to choose definitively between these possibilities.

Much of the evidence commonly cited in behalf of the contention that most homicide does not result from a prior intent to kill turns out, on closer inspection, not to bear on the matter of intent, one way or the other. For example, most homicide involves people known to each other prior to the incident--and often, involves family members. Many authors infer from this fact that these homicides are largely unintentional--"crimes of passion" that turn lethal in the mythical "moment of rage" or distress. It is, however, plain that homicides among family members could just as easily result from prior intent as from any other circumstance; the evidence on victim-offender relationships, while of great interest on its own, says little or nothing about the issue considered in Chapter Eleven. We conclude that much the same is true of most of the other evidence commonly cited in behalf of the "ambiguous intentions" hypothesis, for example, that homicides are frequently accompanied by altercations among the parties, or that one or both parties had been drinking, and so on. All of these are interesting facts, but none of them bear directly on the matter of intent.

Chapter Eleven also reviews briefly some experimental evidence on the hypothesis that "even the casual sight of a gun may catalyze violence" (Curtis, 1974: 108). There are perhaps three or four studies in the literature that provide support for this hypothesis, but an equal number that do not. The relevance of the behaviors of undergraduates in a laboratory setting for an understanding of criminal violence is, to be sure, always open to question.

Analysis of the effects of weapons choice in robberies tends also to show that robberies committed with firearms are more likely to lead to the death of the victim than robberies committed through other means. Since it seems plausible to assume that the underlying motive in all robberies is the same (economic gain to the offender), the robbery evidence is thus the strongest in the literature showing that a gun is intrinsically more lethal than other weapons, net of possible differences in underlying motive. But even here, there are complicating factors. First, as Cook (1980, 1981) has persuasively argued, many of the robbery-connected homicides do not appear to have resulted from some underlying "economic gain" motivation so much as from the innate brutality of the offenders, with the robbery itself being committed more or less as an afterthought. This again suggests "differential motivations" as a possible explanation for the lethality differential even in the case of armed robbery. Secondly, while the probability of death to the victim is higher in gun robberies than other armed robberies, the probability of serious but nonfatal injury is substantially lower, owing, presumably, to the fact that fewer

victims attempt to resist a gun robbery in the first place. Also, the average "take" in a non-gun robbery is roughly a third the average "take" in a robbery committed with a firearm, presumably because robbers armed with firearms take on more lucrative victims. These considerations suggest the possibility that in a hypothetical "no guns" condition, the total number of robberies committed would sharply increase (to compensate for the lower profitability of each non-gun robbery) and the rate of personal injury would also sharply increase (because in the non-gun robbery, victims are more liable to resist, and thus be injured). It is also conceivable that there would be some "substitution" of victims, with robbers more apt to strike relatively more vulnerable targets (e.g., women, the very young, or the very old).

Chapter Twelve reviews the few studies that have looked at the "Treatment of Weapons Offenders in the Criminal Justice System." In previous chapters, we consider the absolute numbers of violent crimes that are committed, the characteristics of the people who commit them and of those victimized by them, the weaponry used in their commission, and the underlying motivations. In Chapter Twelve, we consider how weapons offenders fare in the courts once they are apprehended and charged with a gun-related crime.

Surprisingly little research attention has been given to this topic. There are no nationally representative data, and, indeed, only two local jurisdictions have been studied in any depth or detail: Washington DC and Los Angeles. However, the findings from these jurisdictions are quite similar. In both Los Angeles and Washington, it appears, the probability of passing

"successfully" through the preliminary stages of court proceedings, the probability of receiving a prison sentence, and the average length of the sentence received are all higher for defendants using firearms in the commission of their crimes than for defendants using no weapons. The major difference between the two jurisdictions is that in Los Angeles, defendants armed with weapons other than guns receive treatment indistinguishable from that given unarmed defendants, whereas in Washington, all weapons offenders apparently receive equal treatment, whether armed with a gun or some other weapon.

The concluding part of this volume deals with "Weapons and Their Control." In Chapter Thirteen, we review the evidence from two recent national surveys on "Public Opinion and Gun Control," that is, we consider what the public wants and does not want by way of stricter firearms regulations. Both surveys were conducted in 1978: one was sponsored by the National Rifle Association, and the other by the Center for the Study and Prevention of Handgun Violence. Together, the surveys are virtually encyclopedic in their coverage of public thinking on gun control issues.

Although the reports in which the survey results are presented differ, at times sharply, in their emphasis and the conclusions advanced from the data, the actual empirical findings are notably consistent everywhere direct comparison is possible. Large majorities of the public favor measures that would require the registration or licensing of firearms, both for new purchases and for firearms presently owned. The public would not favor such measures if their

costs were inordinately high, and there is considerable sentiment that any such measure would only be effective were it uniform across all the states. Equally large majorities oppose an outright ban on private handgun ownership, although there is a majority sentiment favoring a ban on the manufacture and sale of cheap, low-quality handguns. Majorities approaching 90% believe they have a right to own a gun; but large majorities also agree that a licensing requirement for handgun ownership would not violate their rights.

Despite the high levels of support for registration or licensing measures, no more than about half the population feels that these measures would cause crime to decrease; many measures other than firearms regulations are thought to be more effective towards this end. Further, most of those who believe that crime would decrease with stricter weapons legislation also believe that the decrease would only be small. It therefore follows that many people support such measures for reasons other than their presumed effects on the crime rate.

There is nearly unanimous sentiment that criminals will always be able to acquire guns, no matter what legislation is passed, and thus, that stricter controls would mainly affect average law-abiding citizens. There is also widespread popular support for the idea of strict and mandatory sentences for persons committing crimes with guns. There is little popular support for the idea that gun controls would be a violation of our basic freedoms.

In general, the opinion data suggest as a useful although not precise metaphor that most people feel that governments should be just as careful about who is allowed to own and use a gun as they

are about who is allowed to own and use an automobile or other potentially dangerous items. Gun control measures enjoying large majority support (namely, registration and licensing) are all similar to measures currently employed to regulate automobile ownership and use; measures substantially more strict than these generally do not curry much favor. The undertone to public thinking on gun control thus seems to be that firearms, as automobiles, are intrinsicly hazardous, and that governments should keep track of them for that reason alone. Whether the act of keeping track would have any effect on crime or violence in the society seems to be taken as a different issue altogether.

Chapter Fourteen, "Regulating Firearms: A Review of Federal, State and Local Legislation," summarizes the existing firearms control measures in the United States. As many have noted previously, existing measures encompass a vast congeries of Federal, state, and local regulations, many of them working at cross-purposes with others. Jurisdictions with extremely restrictive gun control policies often abut jurisdictions with barely any controls at all. This fact, plus the evidence suggesting a substantial interstate commerce in "crime guns," make it altogether plain that gun control measures in a single jurisdiction will have no direct or necessary implication for the availability of firearms for illicit criminal purposes in that same jurisdiction.

Chapter Fifteen, the last analytic chapter in the volume, considers "Weapons Control Legislation and Its Effects on Violent Crime." Here, the issue is the extent to which various legislative initiatives have actually achieved their intended goals.

Studies relevant to this topic fall into three broad categories:

(i) studies that compare crime rates across jurisdictions (typically, cities or states) with variable weapons control legislation in force; (ii) "process" studies that examine the actual implementation of various gun control measures; and (iii) time-series or before-after studies that follow trends in crime before and after the introduction of a new legislative measure.

Studies of the first type depend critically on the ability of the analyst to model the crime phenomena in question; this is simply because jurisdictions differ in large numbers of ways, other than in gun control measures on the books, that might plausibly affect crime rates. Conclusions about the impact of firearms controls are thus valid only to the extent that these "extraneous" factors are modelled and held constant in the analysis. And since there is, as yet, no firm theory of crime and how it is produced, none of the studies of this type can be said to provide conclusive evidence, either way, on whether or how firearms controls influence crime rates.

"Process" studies have generally been more informative in that they often point out major gaps between the legislation-as-enacted and the legislation-as implemented; indifferent or hostile implementation of even the most aggressive and well-considered measures will necessarily operate to mitigate the legislative effects. Zimring's (1975) analysis of the implementation of the Gun Control Act of 1968, and Beha's (1977) study of the implementation of the Massachusetts Bartley-Fox Amendment, are both excellent examples of the advantages that accrue from studies of this sort.

All else equal, before-after studies are useful designs for

examining program impacts, and some research of this sort has been done on various gun control measures. Crude comparisons of crime rates at two time points (one prior, and one subsequent, to enactment) are, of course, of little or no value. As in the case of cross-sectional studies, the processes that govern the operation of the time-series being analyzed have to be understood and modelled if the impact analysis is to have meaning. That is, one must have some method of estimating what would have happened in the time series had the measure not been introduced before perturbations in the time series after enactment (either positive or negative) can be legitimately taken as evidence of program effects. So here too, the need for an empirically based theory of crime and how it is produced is apparent.

In general, our review of the relevant literature on weapons, crime and violence in the United States confirms that the existing studies are far more noteworthy for what they do not show than for what they do. With a few exceptions that are duly noted in the body of the volume itself, there is scarcely a single point in the whole of the literature that could be said to be firmly and indisputably established. And yet, there is an obvious and pressing need for firm knowledge in this area. Otherwise, important policy decisions, affecting vast segments of the American population, will be enacted in a virtual information vacuum. For this reason, we conclude the study with our thoughts about an agenda for research on weapons, crime and violence -- one that we believe would, if followed, at least begin to close some of the more cavernous gaps in present knowledge and provide the rudiments of an information base upon which sensible weapons policies could be erected.

## CHAPTER TWO

## HOW MANY GUNS IN PRIVATE HANDS?

Estimates of the total number of firearms now in private hands in the United States vary from a lower bound of about 50,000,000 to an upper bound of 200,000,000 or more (Newton and Zimring, 1969; Wright and Marston, 1975.)<sup>1</sup> In the absence of a vigorous national program of weapons registration, covering both new purchases and weapons currently in private hands, and applied uniformly across all 50 states, it is very unlikely that the exact number of privately owned firearms will ever be known, even to the nearest few million. All methods for estimating this quantity are necessarily inferential and thus subject to errors of unknown seriousness. On the other hand, the approximate order of magnitude is known with reasonable certainty; it appears that there are not fewer than 100,000,000 firearms now in private hands in the country.

It must be emphasized in advance that every effort to estimate the domestic weapons stock is based on a wide assortment of implicit and explicit assumptions, most of which have never been adequately researched. The same is true of the estimates undertaken in this chapter. The estimates provided here are "better" only in the restricted sense that we have tried to be perfectly explicit about every assumption we have made, not in the sense that we have made "better" assumptions.

Approaches to estimating the amount of private weaponry can be categorized into "supply" side and "demand" side methods. The supply

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side approach typically involves calculating the total number of firearms produced domestically each year and adding to that the number of imported firearms. Additional allowances must of course be made for the number of firearms taken out of use each year through loss, destruction, confiscation, obsolescence, or other means.

There are a number of well recognized problems with this approach. First, while domestic production of firearms can be estimated more or less accurately, at least for recent decades, firearms imports cannot be. According to Newton and Zimring (1969), the two major import flows that cannot be accurately known are (i) firearms imported into the country by returning servicemen, and (ii) firearms imported by private citizens. The relatively high incidence of weapons ownership among veterans (see Chapter Six) suggests that the first may not be trivial. Newton and Zimring note that "firearms purchased by the military since 1940, less those in current use, total approximately 14,000,000," of which some 2 million have been sold or given to foreign countries (1969: 4), leaving a "surplus" of 12,000,000 weapons -- some fraction of which are now in private hands. This estimate covers the period through 1968 and therefore does not include the bulk of the Vietnam era or the weapons returned to the U.S. by veterans of that era. Concerning the second, as Newton and Zimring have also pointed out, customs law allows returning U.S. citizens to import up to three firearms without a formal customs declaration. Since the number of Americans travelling abroad in any typical year is in the tens of millions (Canada and Mexico travellers included), it is apparent that the total flow of weaponry from this source might also be substantial.<sup>2</sup>

A second problem with the supply side approach is that no good estimate of the number of weapons taken out of use in a typical year is available.<sup>3</sup> With proper care, a firearm remains serviceable more or less indefinitely; however, no study of maintenance behaviors among firearms owners has ever been conducted. Police confiscations of weapons occasionally involve firearms manufactured in the 19th century; the handgun fired at President Gerald Ford by Squeaky Fromm was manufactured in 1911; specialists in antique firearms often restore weapons several centuries old into quite serviceable conditions. It is thus conceivable that a very large fraction of all weapons manufactured or imported in the 20th century are still serviceable, or could at least be made serviceable with the proper attention.

Figures from Newton and Zimring (1969: Table 1-1) show a total domestic production of 11,000,000 firearms between 1899 and 1968, and a total import flow from known sources of 11,000,000 firearms since 1918, for a grand total base figure of roughly 102 million firearms available as of 1968. It can be assumed that both these numbers are subject to high degrees of error, especially the portion of them that depends on records from the turn-of-the-century era. Nonetheless, they seem to be the best (most complete) figures available for the period up to 1968. To these figures must be added total inward flow from unknown sources; likewise, the total number of firearms taken out of use must be subtracted out. Having no good information on either of these quantities, Newton and Zimring make the convenient (but not implausible) assumption that the necessary "adds" and "subtracts" simply cancel each

other out. Thus, the 1968 supply side estimate is 102 million total weapons in private hands.

An update of these figures through the decade of the 1970's is shown in Table 2-1, which presents data from the US Statistical Abstract on weapons production and imports from 1969 through 1976, the most recent year for which data are available. Import data shown in the table for the years prior to 1970 are taken from the US Census of Imports, General and Consumption, Schedule A; all data in the table after 1970 are taken from summary statistics provided by the Bureau of Alcohol, Tobacco, and Firearms (ATF).

It cannot be assumed that the figures shown in the table are entirely reliable. Every Statistical Abstract contains a table similar to Table 1, and there are some discrepancies in the reported numbers from one Abstract to the next. For example, the 1975 Abstract reports a total of 1,174 thousand imported weapons in 1973, whereas the 1977 Abstract reports only 914 thousand imported weapons for 1973, a discrepancy of about a quarter million weapons. All such discrepancies, however, involve only the import figures; the figures on domestic production are constant from one Abstract to the next. Data in Table 2-1 are in all cases taken from the 1977 version of the figures, on the assumption that the discrepancies reflect errors in the earlier compilations that have been corrected for more recent ones.<sup>4</sup>

From 1969 through 1976, annual domestic production has averaged about 5.4 million weapons and imports have averaged about 960,000 weapons, for a net addition of about 6.3 million new weapons to the domestic market each year since the Newton-Zimring data were originally compiled.

TABLE 2-1  
FIREARMS PRODUCTION AND IMPORTS, 1969-1976  
(IN THOUSANDS)

	1969	1970	1971	1972	1973	1974	1975	1976	$\bar{X}$ 's
<u>Domestic Production</u>									
Handguns	2840	(NA)	(NA)	(NA)	1734	1715	2024	1833	2029
Rifles	}2450	(NA)	(NA)	(NA)	1830	2099	2123	2091	}3324
Shotguns		(NA)	(NA)	(NA)	1280	1825	1621	1301	
<u>Imports</u>									
Handguns	349	227	301	486	299	259	462	270	329
Rifles	207	237	243	197	195	188	166	157	199
Shotguns	334	363	406	535	420	456	457	468	430
<u>TOTALS</u>	6180	(NA)	(NA)	(NA)	5758	6542	6852	6120	6290

NA: Not available

SOURCE: Statistical Abstract of the United States, 1977: Table 289

Both these rates are substantially higher than the rates that prevailed earlier in the century; based on Newton and Zimring's data, for example, annual domestic production averaged only about 1.3 million firearms from 1899 to 1968, and imports averaged about 200,000 firearms. The rate at which new weapons are presently being added, in short, is some four times the rate that prevailed during the first half of the 20th century. These data therefore suggest that the sharp upturn in weapons sales, especially in handgun sales, noted by Newton and Zimring (1969: Ch. 4) for the decade of the 1960's has no doubt persisted, more or less unabated, up through the present time.

The data from Table 2-1 allow us to update the supply-side estimate to 1978. If 6.3 million new weapons have been added to the domestic market each year since 1968, and we assume that no additional weapons have been taken out of use in the period, then the 1978 supply estimate is the original 1968 figure, 102 million, plus 6.3 million additional each year for the past ten, for a grand total of about 165 million weapons. This figure amounts to the total known production and importation of weapons in the United States in the 20th century. If we add an additional 12,000,000 from surplus military stocks and other unknown import flows, we are left with an estimate of about 177 million as the absolute upper bound of the possible number of serviceable firearms now in private hands in the United States. Since at least some of these 177 million will have been taken out of use in the century, we may confidently conclude that the total number is not more than about 180 million weapons, and that the true present number must be less than that--by an amount equal to the number of these weapons that are no longer serviceable or in use.

As we have already noted, the Newton-Zimring supply side calculation is based on the simple assumption that additions to the supply from unknown sources balance out subtractions from the supply due to weapons taken out of use, and while this is not an implausible assumption, it is nonetheless just a guess. Further, for weapons manufactured early in the century, it is liable to be in serious error, since we can reasonably assume that the probability of a weapon being serviceable today is a very strong function of the number of years that have elapsed since it was first manufactured. The fraction of weapons manufactured in 1900 that are still in use today, in other words, must be relatively small, certainly smaller than the fraction of those manufactured in, say, 1950 that are still serviceable today. These considerations suggest that it may be useful to think of these production and import numbers in terms of weapon half-lives. Following the well-known physical analogue, we may conceive of a weapon's half-life as the number of years that must transpire before one-half of any year's production has been taken out of use; in this sense, then, the half-life is just the number of years that the "average" weapon survives. Now, obviously, no one knows for sure what the true half-lives of weapons are; and there are other complications: half-lives for imports may be much shorter than for domestic production; half-lives for handguns may be shorter than for long guns; certainly, the lifetime of any particular weapon will depend quite strongly on patterns of maintenance and use. But, as with Newton and Zimring, we are free to make some assumptions, which can in turn be used to "correct" the production and import figures for half-life "decay" and thus to generate a "best guess" about the total numbers of weapons now in private hands.

To emphasize the "iffiness" of these calculations, and to show quite directly how the final figures depend heavily on the initial assumptions, all our estimates are generated for assumed half-lives of 30 and 50 years. It is a very rare consumer good that has an expected useable lifetime as long as 30 years, so our feeling is that these assumptions are quite generous. To give some idea of what these assumptions amount to, the 30-year half-life would mean that about 20% of all weapons manufactured in 1900 are still serviceable and in use in 1978; under the 50-year half-life assumption, the fraction of weapons manufactured in 1900 surviving through to 1978 would be just over a third; and so on.

Given an assumed half-life (HL), the relationship between original production and import numbers and numbers of presently serviceable weapons surviving is given by the following equation:

$$N_p = N_m (.5)^{T/HL} \quad (\text{Eq. 1})$$

Where:

$N_p$  = the number of weapons surviving;

$N_m$  = the number of weapons manufactured;

$T$  = the elapsed time between manufacture date and the present; and

$HL$  = the assumed half-life (either 30 or 50 years).

Using the production and import data through 1968 from Newton and Zimring (1969: Table 4-1), the update of those figures through 1978 (from Table 2-1, above), and Equation 1, it is possible to project the number of weapons surviving through to either 1968 or 1978, as in

Table 2-2. The table shows, separately for each decade, the best guess as to the total number of weapons made or imported and the elapsed time between the origin year and either 1968 or the present. The table further shows both fractions and numbers of weapons from each origin decade that survive through to either 1968 or 1978, assuming half-lives of 30 and 50 years, respectively.

According to these projections, the number of serviceable weapons remaining in private hands as of 1968 was somewhere between roughly 61 and 74 million weapons. If we add 12,000,000 to these figures to allow for surplus military weapons and inward flows from other sources, and make no further corrections for decay among these additional 12 million, our projections give between 73 and 86 million privately-owned weapons in 1968, vs. the 102 million estimate originally provided by Newton and Zimring. The original figure is thus plausible only if either (i) the total from unknown sources is very much more than 12,000,000 weapons, which seems unlikely since this is the total number of unaccounted-for surplus military weapons through 1968, or (ii) the actual half-life of a weapon is very much more than 50 years, which also does not seem very likely. We thus conclude that the 102 million figure as of 1968 is implausibly high for that year, and that the actual number of weapons in private hands as of 1968 was probably closer to 86 million than to 102 million.

Projections through to 1978 give a figure between 106 and 124 million total privately owned weapons; adding the constant 12,000,000 weapons otherwise unaccounted for increases the guess to between 118 and 136 million weapons in private hands as of 1978. We may thus decrease our guess about the upper limit of the number from about 180 million (total

TABLE 2-2  
 PROJECTED NUMBERS OF PRIVATELY OWNED WEAPONS, USING IMPORT AND MANUFACTURING DATA  
 AND ASSUMED WEAPONS "HALF-LIVES" OF 30 AND 50 YEARS

Origin Year	Nm <sup>a</sup>	HL = 30 Years						HL = 50 Years			
		T(1968) <sup>b</sup>	T(1978) <sup>b</sup>	f(1968) <sup>c</sup>	N(1968) <sup>d</sup>	f(1978) <sup>c</sup>	N(1978) <sup>d</sup>	f(1968) <sup>c</sup>	N(1968) <sup>d</sup>	f(1978) <sup>c</sup>	N(1978) <sup>d</sup>
1899-08	10.6	64	74	.228	2.4	.181	1.9	.412	4.4	.358	3.8
1909-18	10.6	54	64	.287	3.0	.228	2.4	.473	5.0	.412	4.4
1919-28	10.6	44	54	.362	3.8	.287	3.0	.543	5.8	.473	5.0
1929-38	10.6	34	44	.456	4.8	.362	3.8	.624	6.6	.543	5.8
1939-48	10.6	24	34	.574	6.1	.456	4.8	.717	7.6	.624	6.6
1949-58	20.0	14	24	.724	14.5	.574	11.5	.824	16.5	.717	14.3
1959-68	29.2	4	14	.912	26.6	.724	21.1	.946	27.6	.824	24.1
1969-78	63.0	--	4	--	--	.912	57.5	--	--	.946	59.6
TOTALS	165.2				61.2		106.0		73.5		123.6

SOURCES: Production and import data through 1968 are from Newton and Zimring (1969: Table 4-1); figures for 1969-1978 are from Table 2-1, above.

<sup>a</sup>Number of firearms manufactured or imported in the indicated period, in millions.

<sup>b</sup>Average elapsed time between date of manufacture and 1968 or 1978.

<sup>c</sup>Fraction of the original number surviving until 1968 or 1978, where HL = 30 or 50 years.

<sup>d</sup>Actual number of weapons surviving until 1968 or 1978, where HL = 30 or 50 years, in millions.

production and imports in the 20th century) to about 140 million (the number that would have survived under an assumed half-life of 50 years plus an additional 12 million not counted in the production and import data). We therefore conclude that there are not more than about 140 million serviceable firearms in private hands in the United States as of 1978. The actual number will be less than 140 million if either (i) the 12,000,000 constant add-on is too high; or (ii) the average lifetime of a weapon is less than 50 years.

It is useful at this point to introduce another consideration that is not taken into account either in the Newton-Zimring original, or in subsequent updates of that original, and that is the exportation of U.S. made weapons to other countries. Certainly, an exported weapon would, in the normal course of things, no longer be available for purchase in the domestic weapons market, and so the estimate of domestic firearms supply must be appropriately discounted by this additional factor. So far as we can determine, there are no readily available figures for U.S. weapons exportation prior to about 1970. The December 1980 issue of American Firearms Industry Magazine, however, gives production and exportation figures for the decade of the 1970's. According to this source, the total 1979 domestic firearms production amounted to just over 5.4 million firearms (consistent with the data in Table 2-1), of which about 540,000 were exported to other countries. Data on other years in the decade show about the same exportation proportion (that is, about 10%). Thus, the data on domestic production (shown in Table 2-1 and employed in the calculations shown in Table 2-2) should be further reduced by approximately ten percent, and this further lowers

the empirically credible upper bound of the true number to about 130 million total domestically owned firearms.

The demand side approach to estimating the total amount of private weaponry uses national survey data on weapons ownership. Harris, Gallup, the National Opinion Research Center, and other survey organizations have been asking respondents whether they own a gun (or keep one in the house) more or less regularly since 1959 (Erskine, 1972). The proportion of US families responding yes to the question has consistently hovered right around 50% (Wright, 1981).<sup>5</sup> Some (although not many) of the national surveys follow up the ownership question with a stem item asking for the total number of weapons owned, typically by type of weapon. The data on numbers owned can thus be used to calculate an average number of weapons owned per family; this average can in turn be multiplied by the total number of families to generate an estimate of the total numbers of weapons in private hands.

Survey evidence available to Newton and Zimring allowed for two of these kinds of estimates. The first is derived from a 1968 Harris Poll commissioned specifically by the National Commission on the Causes and Prevention of Violence. Results from the poll, as reported in Newton and Zimring, showed 49% of all families owning a weapon, and a reported average of 2.24 weapons owned by each weapons-owning family. Given just over 60 million families in the US as of 1968, these findings project to a total of roughly 66 million privately owned weapons--well below their initial supply side estimate of 102 million weapons, but quite consistent with the "corrections" of that estimate shown in Table 2-2, above. A second estimate is derived from a 1966 Gallup finding that

59% of all US families owned a gun; using the 2.24 average from the Harris data and the same population base, the Gallup finding projects to a total of about 80 million privately owned weapons, again well below the original supply-side calculation but clearly within the range suggested by our Table 2-2 corrections.

Since the 1966 Gallup percentage (of 59%) gives a final number much closer to the initial supply side estimate than the 1968 Harris percentage (of 49%), Newton and Zimring ignore the Harris-based estimate in their subsequent calculations and conclude that the survey data show some 80,000,000 weapons in private hands. Even this figure is about 20,000,000 short of the supply side estimate (of 102,000,000). Lacking any better way to resolve the apparent discrepancy, the concluding estimate provided in Newton and Zimring is just the simple average of the final supply and demand side estimates; their "bottom line," in short, is 90,000,000 total privately owned weapons.

Newton and Zimring are predictably concerned by the wide discrepancy between 66 (or even 80) and 102 million weapons. Their assumption is that the survey approach is faulty, for two reasons: (i) respondents may not always know about all the weapons owned by other members of the household and may therefore report incorrectly low numbers; and (ii) far more importantly, many people may be reluctant to say that they own a weapon even if they do. In the latter case, the argument is that various "demand characteristics" of the interview situation may prevent people from revealing these "darker" aspects of themselves (on this, see also Bruce -Biggs, 1976; Kleck, 1979a; etc.)

This, however, makes the egregious and entirely unresearched assumption that many weapons owners are somehow embarrassed because they own a gun and thus hesitate to "fess up" when asked. And yet, half of all respondents freely admit to possessing a weapon, which should give some reason for skepticism about the "demand characteristics" interpretation.<sup>6</sup>

The Newton-Zimring analysis of the discrepancy assumes that the survey estimates are too low, for reasons just discussed. It may also be that the supply side estimates are too high, as in Table 2-2 and the ensuing discussion. The range suggested by our "corrections" of the Newton-Zimring data is between 61 million and 86 million weapons as of 1968, a range within which both Harris and Gallup survey estimates fall. In other words, if the assumptions we have made to correct the initial figures are accurate, then both supply and demand side estimates give approximately the same results.

On the other hand, we may be reasonably certain that the survey approach underestimates weapons possessed illegally and those kept primarily or exclusively for illicit purposes, so all such demand side estimates should definitely be taken as lower bound estimates. The lowest such estimate is the Harris-based estimate, 66 million weapons; the highest plausible figure from Table 2-2 is 86 million weapons; the best guess is thus that there were probably not fewer than 66 million, and probably not more than 86 million, weapons in private hands in the United States as of 1968.

The survey approach, of course, is not free of problems. While we are not convinced that "demand characteristics" are one of them,

the following doubtlessly are:

(i) As Newton and Zimring point out, respondents may not know about weapons owned by the family or kept in the house. For obvious reasons, about half the respondents in any national survey are women, whereas most gun owners are presumably men. It may be that many women are unaware of weapons owned by their husbands or are incorrectly informed about the total number

(ii) Most weapons ownership questions from the national surveys ask whether there is a gun in the home. Interpreted literally, this would exclude guns kept in garages or glove compartments, those stored in gun clubs or shooting ranges, or those kept in any other place outside the home.

(iii) Likewise, many of the national survey questions ask specifically about the respondent, for example, "Do you have a gun in your home?" (the Gallup item) or "Do you own a firearm?" (the Harris item). Weapons owned by family members other than respondents may thus be under-reported by this question.

(iv) The survey approach allows respondents to use their own subjective definitions of what constitutes a "gun," and these definitions are obviously free to vary from one respondent to the next. For example, entirely serviceable weaponry whose main function in the household is decorative (e.g., rifles hung over fireplaces) may or may not be reported; weapons purchased long ago and stored in some out-of-the-way place (to be retrieved "just in case") may be forgotten; gas-operated or pump-operated weaponry may or may not fall into the respondent's definition of a gun, and so on.

(v) Finally, and potentially of greatest importance, as we demonstrate below, survey data on numbers of weapons owned are invariably taken (or at least reported) in categories, especially at the upper end. For example, the Harris poll data reported by Newton and Zimring use "four or more weapons" as the highest ownership category. "Four or more," in turn, is an exceedingly broad range, covering all households with anywhere from four to dozens and dozens of firearms. The calculation of an "average" number of weapons owned per weapons-owning family from categorical data such as these therefore requires an assumption about the true midpoint of the "four or more weapons" range.

To indicate the seriousness of this problem, Table 2-3 presents the Harris ownership data as reported in Newton and Zimring (1969: Table 2-1), the data from which their Harris-based estimate of 66 million firearms is derived. Note the category, "four or more weapons." If one assumes that the true average number of weapons possessed by families possessing "four or more weapons" is just five weapons, then the total number of weapons owned by families in that category is about 30,000,000 weapons and the projected total number of weapons in private hands is about 68.7 million, or just about the figure that Newton and Zimring report. If, on the other hand, one assumes that the true average number of weapons owned by families owning more than four weapons is as high as ten weapons, then these families possessed (in 1968) some 60,000,000 weapons total, and the projected total number of weapons in private hands for that year is 98.7 million, very close to the 102 million figure generated in the initial supply side approach.

TABLE 2-3

NEWTON-ZIMRING-HARRIS DATA ON NUMBERS OF WEAPONS OWNED (1968)

<u>Firearms Owned</u>	<u>Millions of Households</u>	<u>Total Weaponry, Assumption A</u>	<u>Total Weaponry, Assumption B</u>
None	30.8 (51%)	0	0
One	12.1 (20%)	12.1 million	12.1 million
Two	7.9 (13%)	15.8 million	15.8 million
Three	3.6 (6%)	10.8 million	10.8 million
Four or More	6.0 (10%)	30.0 million	60.0 million
TOTALS	60.4 (100)	68.7 million	98.7 million

Assumption A: The average number of weapons owned among families owning four or more weapons is five weapons.

Assumption B: The average number of weapons owned among families owning four or more weapons is ten weapons.

SOURCE: Newton and Zimring, Firearms and Violence in American Life (1969): Table 2-1.

In short, whether there is any genuine discrepancy or not between supply and demand side approaches turns entirely on the guess one is willing to make about the average number of weapons owned by families owning "four or more" of them.

There is a rather comforting symmetry to all this. The supply side approach (as corrected in Table 2-2) gives a lower bound of 61 million weapons under the most restrictive assumptions, and an upper bound of 102 million weapons under the least restrictive assumptions (in this case, under the initial Newton-Zimring assumptions). Likewise, the demand side approach gives a lower bound of about 66 million weapons under the more restrictive assumption (that the "four or more" average is five weapons) and an upper bound of about 99 million weapons under the less restrictive assumption (that the "four or more" average is ten weapons). All this makes it virtually certain that the true value in 1968 fell somewhere in the range of  $80 \pm 20$  million weapons in private hands.

It must also be emphasized that the "discrepancy" that figures so prominently in the Newton-Zimring report may well result entirely from assumptions made about the numbers produced by each method, not from the numbers themselves. It also appears that the discrepancy is greatly inflated because Newton and Zimring make very liberal assumptions about the supply side data and very conservative assumptions about the demand side data. Given the inherent "iffiness" of both methods and taking into account the considerations enumerated here, one is necessarily much more impressed by the consistency of estimates

across methods than by the discrepancies.<sup>7</sup>

The most recent survey data on numbers of weapons owned are from a 1978 survey conducted by Decision-Making Information, Inc., under commission to the National Rifle Association. (See Chapters Seven and Thirteen for a secondary analysis and discussion of the DMI survey). Ownership data from the DMI survey are shown in Table 2-4.

There are a number of findings reported in the table that bear emphasis in present context:

(i) The ownership proportion from the survey is 47%, very close to the 1968 Harris proportion of 49% and broadly consistent with virtually all other survey estimates, the 1966 Gallup estimate being the major prominent exception.

(ii) Altogether, a mere one per cent of the sample refused to answer the gun ownership question. By way of contrast, this is roughly one-tenth the proportion who typically refuse to answer a question on total family income, which gives some indication of the relative sensitivity of guns vs. income issues in the minds of the American population. That only 1% refuse to answer the gun ownership question again casts some doubt on the "demand characteristics" argument.

(iii) According to DMI, 1% of all families own between 5 and 9 handguns, and an additional 1% own 10 or more handguns. This means that half the families possessing more than five such weapons actually possess more than ten of them. Likewise, 5% of all families own between 5 and 9 long guns, and an additional 2% own ten or more long guns, which means that roughly a third of all families owning more than five actually own more than ten. These data thus strongly suggest that

TABLE 2-4

DMI DATA ON NUMBERS OF WEAPONS OWNED (1978)

Do you have guns of any kind in your home?

YES	47%
NO	52%
REFUSED	1%

[IF YES] Are there any pistols, revolvers, or other handguns in your home? [IF YES]: How many?

NONE	46%
ONE	30%
TWO	8%
3-4	4%
5-9	1%
10+	1%
Yes Only	8%
Refused	4%

Are there any shotguns or rifles in your home? [IF YES]: How many?

NONE	14%
ONE	29%
TWO	21%
3-4	16%
5-9	5%
10+	2%
"Yes"	9%
Refused	4%

SOURCE: Decision-Making Information, Inc., Attitudes of the American Electorate Toward Gun Control 1978: p. 70.

the true midpoint of the range "four or more weapons," as discussed above, may be much higher than five weapons, or in other words, that the "discrepant" Harris-based estimate of 66 million total weapons results mostly from an implausibly low guess.<sup>8</sup>

(iv) Note finally that 12% of the handgun owners and 13% of the long gun owners did not provide information on the number of weapons they owned (shown as "Yes Only" and "Refused" in the table), which introduces one additional complication in calculating a total number of weapons from these data.

Our estimate from these data of the total number of weapons in private hands as of 1978 is based on these assumptions: (i) There are 75,000,000 total households in the US as of 1978. (ii) The distribution of numbers of weapons owned among the "Yes Only" and "Refused" categories is identical to the distribution among persons who actually answered the "how many weapons?" question. (iii) The midpoint of the range "5-9 weapons" is 7 weapons. And (iv) the midpoint of the range "10 or more weapons" is 12 weapons. Of these four assumptions, only the latter is likely to be seriously problematic. If the "10 or more" category contains a sizable number of weapons collectors, as it very probably does, and if the average collection contains, say, 25 or more firearms, then our assumption about the true midpoint of the "10 or more" range (12 weapons) will no doubt be much too low. Lacking any useful data on the matter, we simply note that these assumptions and the data in Table 2-4 then project out to an estimate of 112 million total weapons in private hands in 1978, very close to the 106 million supply figure calculated in Table 2-2 on the 30-year half-life assump-

tion and somewhat below the 124 million figure derived from the 50-year half-life assumption. Thus, just as we concluded earlier that the true 1968 figure almost certainly fell between 60 and 100 million, so may we conclude that the present (1978) figure probably falls between 100 and 125 million, or between 100 and 140 million if our figure of 12,000,000 weapons from fugitive sources is added in. Here too, one should be more impressed by the order-of-magnitude agreement across methods than by minor discrepancies that reflect nothing more than one's initial assumptions. The substantive conclusion is therefore that there are probably not less than 100 million, and probably not more than 140 million, privately owned firearms in the United States at the present time.

The distribution of these private weapons by weapons type has been estimated by a large number of observers; two of these estimates are shown in Table 2-5. The first is the estimate due to Newton and Zimring (1969), and the second is based on the update of the Newton-Zimring efforts reported in Spiegler and Sweeney (1975). Although there is much disagreement in the literature over the total number of weapons, there is a fair consensus over the relative proportions: virtually all studies report percentage distributions very close to those shown in Table 2-5.

Rifles are the most popular type of private weaponry, by a thin margin; shotguns are a close second. Approximately two-thirds of the total weaponry are thus long guns; the remaining third are handguns. The available estimates are that there are something on the order of 30-40 million handguns in the United States at the present time.

TABLE 2-5  
DISTRIBUTION OF PRIVATE FIREARMS BY TYPE

	1968 <sup>a</sup>		1974 <sup>b</sup>	
	N	%	N	%
Rifles	35,000,000	39%	50,000,000	37%
Shotguns	31,000,000	34	45,000,000	33
Handguns	24,000,000	27	50,000,000	30
TOTALS	90,000,000	100%	135,000,000	100%

<sup>a</sup>SOURCE: Newton and Zimring, 1969: 6.

<sup>b</sup>SOURCE: Spiegler and Sweeney, 1975: 3.

Subject to several qualifications discussed in later chapters, it may be assumed that most of the private long guns are owned and used primarily for sporting purposes of one or another sort; the same would also be true for some fraction of the handguns (see Chapter Three). However, "self-defense" is cited as a reason for owning handguns more commonly than any other, and by far the majority of all firearms used for criminal or illicit purposes are handguns. For these reasons, most (but not all) of the debate over "gun control" has focussed on the control of handguns. Aside from the approximate total number, then, what else do we know about the existing handgun supply?

Unfortunately, relatively little. Tables presented earlier in the chapter give some rough feel for the distribution of domestics vs. imports; roughly three-quarters of the handguns now in private hands were manufactured (or assembled) in the United States. Spiegler and Sweeney (1975:4) have compiled data on calibers for the domestic production of handguns for the years 1973 and 1974; these data are shown below as Table 2-6. Revolvers (essentially, handguns with rotating ammunition chambers) are by far the more popular, outnumbering pistols (any handgun other than a revolver) by about 2.5 to 1. Just over half of all the handguns (53%) can be classified as "small caliber," namely .32 caliber or less; the remainder are large-caliber weapons (.38 caliber or more). According to these data, the most popular handgun currently being manufactured in the US is a .38 caliber revolver, followed closely by a .22 caliber revolver; .357 caliber revolvers and .25 caliber pistols are tied for third. So far as we have been able to determine, no study of the equivalent distributions among imported

TABLE 2-6  
DOMESTIC HANDGUN PRODUCTION BY CALIBER, 1973-1974.<sup>a</sup>

Caliber	Revolvers	Pistols	Total	% of Total
.22	854,000	321,000	1,176,000	34
.25	--	436,000	436,000	13
.32	217,000	2,000	219,000	6
.38	879,000	50,000	928,000	27
9mm	--	72,000	72,000	2
.357	436,000	--	436,000	13
.44	79,000	--	79,000	2
.45	21,000	83,000	104,000	3
TOTALS	2,486,000	964,000	3,449,000	100%
% of TOTAL	(72%)	(28%)	(100%)	

<sup>a</sup>SOURCE: Spiegler and Sweeney (1975: 4).

handguns has ever been done, although there is a recurring surmise that most imported handguns are of the small-caliber type.

Summarizing briefly, the substantive conclusion to this point is that there were about 80 million total weapons in the United States in 1968, and about 120 million of them in 1978 -- an increase whose possible causes are considered in the following three chapters. In passing, it can be noted that all the estimates reported here are substantially lower than the estimates commonly supplied by advocates and polemicists on either side of the Great Gun War. We have in the previous pages laid out in rather precise detail the actual assumptions and calculations on which our guesses are based, and we invite others who favor different estimates to do likewise. It should also be noted that it is generally in the best interests of both sides to overstate the private ownership of guns: the pro-gun-control forces, that is, are interested in the highest possible numbers because they illustrate in the most dramatic way the extent and "urgency" of the "gun problem," and the anti-gun-control forces are interested in the highest possible numbers because they illustrate most dramatically the number of citizens whose rights and prerogatives would be infringed by additional weapons regulations.

Although it would certainly be nice to know the exact figures, and especially nice to know the approximate accuracy even of our order-of-magnitude figures, these estimates of the total weaponry are no doubt more than "close enough" for all practical, that is to say, for all policy purposes. Whether the true number is "only" 100,000,000, or "fully" 140,000,000, the fact remains that "by whatever measure, the

United States has an abundance of firearms" (Newton and Zimring, 1978:7). It is, in short, the general abundance more than the exact figure that defines the relevant policy parameters of the "weapons" issue. The parameters in question are these:

(i) Any effort to curtail the private ownership or use of firearms will necessarily affect the lives of about half the families in the nation. Such a procedure, in short, would be highly intrusive, and in a democratic society, not one to be undertaken lightly. The sheer numbers involved make the compliance issue highly salient in this context; the same numbers also raise an obvious concern about the potential political opposition that any such measure might face. There is, on the other hand, persuasive evidence that many, perhaps most, weapons owners would not object to stricter regulations concerning firearms ownership or use (Wright and Marston, 1975); among non-owners, the proportion who would not object is even higher. (Public opinion data relevant to weapons issues are reviewed below in Chapter 13). So it assuredly cannot be concluded from the evidence on total numbers that opposition to stricter laws would be intense, only that such a possibility exists and that any such law would impinge upon a very large fraction of the total population.

(ii) Any new legislation establishing registration or permit mechanisms enacted retroactively so as to cover not only new purchases but also to cover weapons currently in private hands will face a literal mountain of at least 100,000,000 weapons to be "registered" or "permitted." The administrative labors necessary to process this many firearms are potentially very high. Precise cost estimates, of

course, are extremely "iffy." Not all gun owners would comply with any such regulation, and while this would raise a serious question about the effectiveness of the regulation, it would at least reduce the costs. Then too, many of the weapons now in private hands have already been "registered" or "permitted" under existing state or local laws; Cook (1979b), for instance, estimates that roughly two-thirds of the U.S. population live in states where local police are already required to check up on a prospective handgun purchaser before the sale is actually made. Assuming that some procedure for eliminating duplication and overlap could be devised, such that any weapon already registered or licensed would be exempt from a new retroactive provision, the total costs would also be substantially lower. Our purpose here, however, is not to generate a best-guess estimate of the costs of new national gun legislation, but rather only to note that even under the most favorable assumptions, the costs will not be trivial.

(iii) Given the total number of weapons now in private hands, the potential effective lifetime of each weapon, and the evident impossibility of confiscating or otherwise removing from use any more than a small fraction of them, it is apparent that the potential supply of weapons that could be used for illicit or criminal purposes is more than ample for the next several centuries, even if the world-wide production of new weaponry were completely halted today. Those 100 million or so weapons already in private hands mean that the hypothetically possible "ideal" state of "no guns, therefore no gun crimes" will be exceedingly difficult--quite probably impossible--to attain.

FOOTNOTES

1. The range among empirically credible estimates of the total number of private weapons is, as we discuss below, much narrower. Many of the "estimates" that appear in print are better described as rough guesses or wild surmise. Sherrill offers this comment: "Just how many guns are floating around the country is anybody's guess; 'experts' have appeared before Congressional committees in recent years to estimate everything up to 200 million guns... The National Commission on the Causes and Prevention of Violence guessed 90 million in 1969. It's a guessing game that depends very much on the mood: shortly after John Kennedy's assassination, a writer for The Reporter magazine got carried away and estimated one billion guns in America" (1973: 13).

One of the problems in this area is that while everyone seems ready to provide an "estimate," very few of these accounts present any description of the methods by which the estimate was obtained. A passage from Bruce-Biggs (1976: 38) is a case in point. "While estimates vary widely," our author notes, "it can be credibly argued that there are at least 140 million firearms in private hands in the United States today." However, no "credible argument" in favor of this figure accompanies the passage; also, there is no footnote to the number, no reference to a study, and no description of the basis of the 140 million estimate. Based just on what appears in the text, this number might well have been pulled from a hat. Note too the unjustifiable certainty of the formulation, "...at least 140 million," suggesting (wrongly, as we discuss below) that the true

number is not less than 140 million weapons. In fact, the best current evidence suggests 140 million as the plausible upper bound of the true number, and the best guess is thus that the true number is somewhere below this upper-bound estimate.

On the topic of "unjustifiable certainty," some mention might also be made of what can be called the "problem of significant digits." For example, one source reports, in all apparent seriousness, that the total number of weapons now in private hands in the United States is "135,578,778" (Speigler and Sweeney, 1975: 3)--a representation in nine significant digits of a number that is, in truth, known only to within  $\pm 20,000,000$ ! But unlike the large majority of such estimates, the Speigler-Sweeney number at least has the strong advantage that the methods by which it was calculated are also reported in full.

2. These surplus military weapons and private imports are two of the three "great unknowns" in the supply-side estimating equation; the third, discussed below, is the rate at which weapons are taken out of use. Thus, all supply-side estimates must make assumptions about these three quantities or rates. The figure of 12,000,000 surplus military weapons is a convenient one for later purposes. Since this figure includes all military weapons produced in the period, less the number sold or given away to other countries, it represents the absolute upper bound of the total number of surplus military weapons available to the private domestic market as of 1968. Now, some very large share of these weapons will have been lost in combat, abandoned, scrapped, and so on. For purposes of some of the calculations undertaken later in this chapter, we make the convenient assumptions that these losses from the surplus military

supply balance out additions through private imports, such that the total flow of weapons into the country unaccounted for by production and import data is just 12,000,000 weapons. As with all such assumptions, this one is very unlikely to be literally true, but is probably close enough for our purposes. Another problem is that the 12-million-military guns figure counts only U.S.-made weapons. Foreign military weapons imported by returning servicemen are therefore not included. The magnitude of this potential flow is, so far as one can tell, completely unknown.

A major source of "subtraction" out of the potential domestic supply is the exportation of U.S. weapons to other countries -- an "obvious" factor that, nonetheless, has not been considered in previous supply-side calculations. Data discussed later in the text suggest that roughly one domestically manufactured firearm in ten is exported to another country. There are, so far as we can tell, no available estimates of illegal exportation, although at least some exportation of this sort can be assumed to occur.

3. According to Speigler and Sweeney (1975: 2), "ATF estimates that guns annually worn out, destroyed, exported, or seized as contraband total about 250,000." Although this estimate is often cited in the literature (e.g., Comptroller General, 1978: 18), we have not yet encountered any such citation that specifically references an ATF source or publication, so we are unable to confirm how the estimate was constructed and, thus, whether it is reasonable or not. Speigler and Sweeney are of the opinion that "this figure appears to be too low." On the basis of data from three Ohio cities, these authors project that some 447,000

guns are confiscated by municipal police alone, nation-wide, in an average year; police confiscations, in turn, are only one of several mechanisms through which weapons can be removed from serviceability.

Better data than those available to Speigler and Sweeney, reviewed in a later chapter, suggest about 260,000 police weapons confiscations per year. It is, however, also the case that such confiscations do not always "remove" the weapon in question from the potential private stock, since weapons confiscated by police sometimes turn back up in private hands, through either licit or illicit means.

Newton and Zimring (1969: 5) report that the useful life of a gun ranges between 10,000 and 100,000 rounds fired. They also note that roughly 4.4 billion rounds of ammunition were manufactured in 1967, which, on an assumption of roughly 100,000,000 weapons, works out to an average of about 44 rounds fired per weapon per year. Taking these figures seriously, the average weapon would thus be expected to last for several hundreds of years.

How long the average weapon actually lasts, of course, will be a function of its initial quality, the rate at which it is fired, and the care which it is given. With the possible partial exception of the first of these, there is essentially no information available on any of these questions.

As we discuss later, Newton and Zimring make no attempt to correct their supply-side data for weaponry taken out of use; their estimate of total weaponry is just the simple sum of known production and importation from 1899 to 1968. It seems highly unlikely, however, that much turn-of-the-century armament is still serviceable or in use, the assump-

that all of it remains in use seems bizarre in the extreme. They justify this treatment with the note that "a firearm can be expected to last indefinitely if given proper care" (1969: 5), but this is hardly a persuasive argument. An automobile will also last indefinitely "if given proper care." This hypothetical possibility, however, says nothing about the care that autos or guns actually receive nor about how long the average auto or gun lasts in fact.

It is, of course, also true that old and dilapidated automobiles can, with adequate attention, be restored to functioning, indeed pristine, condition, and the same is true of old guns. Virtually every firearms buff who has read this material has seen fit to call our attention to one or another centuries-old firearm that they or one of their acquaintances has restored to serviceable condition. But, to emphasize, these examples do not address the issue of the average lifetime of a private weapon. Whether the "typical" gun owner lavishes the same care on his or her firearms that gun buffs lavish on theirs is an open empirical question.

It is always risky to reason by metaphor, but the parallel with private automobiles seems potentially informative. Consider: the purchase price of a new firearm will seldom run to more than several hundreds of dollars, whereas the purchase price of a new car runs to several thousands. And yet, the average private automobile receives indifferent maintenance at best, and the average lifetime of a new car cannot be more than ten or fifteen years. Why, then would one expect the average firearm to receive better care and maintenance than the average automobile? Or to have a substantially longer lifespan?

4. Estimates of the total amount of weaponry based on the 1977 version of the figures are therefore somewhat lower than those based on earlier compilations of the "same" figures. Spiegler and Sweeney (1975), for example, using the earlier figures (the only ones available to them as of their writing), show an annual average of about 1.1 million imported firearms from 1969 through 1974, vs. the annual average of about 958 thousand shown in Table 2-1 (1975: Appendix A). Since we have only assumed that the more recently published figures are the more accurate ones, prudence might well suggest that one split the difference, in which case the reasonable guess is that imports have been averaging about 1 million new weapons per year. Since imports in either case are only about one-fifth or less of the annual domestic production, it is clear that these discrepancies in the import figures have only modest effects on estimates of the total number of weapons being added to the market yearly.

The definitive discussion of ambiguities in the supply-side data, especially the import data, is Zimring (1975); see also the following chapter.

5. Trend data from the surveys on weapons ownership are presented and discussed in Chapter Five. There are, as noted in the text, many possible sources of ambiguity in the survey-based estimates, not least being the varying definitions that respondents might have in mind when asked about "guns." Some fraction of the "private" weapons ownership detected by the survey method, we should also note, would not, strictly speaking, be "private" but would rather consist of firearms owned for occupational purposes (e.g., by policemen and other security forces).

- On this, see Chapter Four. While most credible national surveys show ownership proportions very close to 50%, some surveys have found proportions as low as 42% and others as high as 59%, which makes it virtually certain that the "true proportion" is between 40% and 60%.
6. One must distinguish, in short, between matters that would be "offensive" or "sensitive" in well-educated liberal circles and matters that would be "offensive" or "sensitive" in the circles in which the vast majority of common people travel. In discussing our research with other academics and social scientists, we have often heard it remarked, "I don't know a single person who owns a gun!" In these circles, gun ownership may very well be "socially undesirable," and the few gun-owners who travel in these circles may well be embarrassed by (or at least sensitive or defensive about) their weaponry. Outside these rarefied circles, however, every other family appears to possess a weapon; and in places other than the very largest cities, it is the unusual family that does not possess at least one gun. Among the masses, in short, weapons ownership is quite evidently not "socially undesirable," since, as we note in the text, half of all families freely admit to possessing a weapon when asked. In other words, our feeling is that the "social desirability" argument amounts in this case to an inappropriate projection of the standards and values of the people who write about weapons onto the people who own them.
  7. All this amply demonstrates what is known in computer science as the GIGO principle. GIGO is an acronym for "Garbage In, Garbage Out." One's estimate of the total number of privately owned weapons can be made to vary by some 40,000,000 weapons simply by substituting one set of plausible assumptions for another. Given the sensitivity of

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the final numbers to the assumptions that produce them, any concern over "discrepancies" between methods is premature until one has, to the extent possible, researched the assumptions in question. Since the indicated research has, for the most part, not been conducted, our presentation emphasizes the general agreement across methods, with the advance understanding that all estimates are subject to great fluctuation as better information becomes available.

Many discussions of the surface "discrepancy" between supply and demand data on weapons ownership are little short of arrogant. Kleck (1979a: 895), for example, has noted the same discrepancy that we have been discussing in the text: "While the commission's Task Force on Firearms [the Newton-Zimring report] estimated, based on manufacturer's records and importation data, a stock of about 100 million guns in the United States in 1968, estimates derived from the Harris survey indicate only about 66 million guns owned." That, as we have seen, is an accurate depiction of the results reported in Newton and Zimring. But what do these results suggest? In Kleck's view, they suggest that "a substantial number of gun owners were lying or 'forgetting' about guns they owned. Other national surveys of course faced this same problem" (1979a: 895). Even a modest curiosity about how the Newton-Zimring numbers were produced would caution against such a conclusion; Kleck himself acknowledges that "the [supply-side] measurement method does not take account of losses of firearms due to destruction, misplacement, or deterioration..." As our own review adequately demonstrates, there is more than ample reason to conclude that the "discrepancy" results more from assumptions made about the evidence than from inherent "deficiencies"

in either measurement technique. The appropriate conclusion to be drawn from the Newton-Zimring discrepancy is thus that all estimates (of any parameter) are highly sensitive to the assumptions from which they are derived. Yet neither Kleck nor any other commentator on the "discrepancy," so far as we can determine, has advanced such a reasonable and informative conclusion; rather, here and in most other accounts, the "discrepancy" is resolved by the offhand slander that many people lie to survey interviewers. Such a conclusion, to emphasize, is not indicated by any evidence of which we are aware; it is little more than a pointless insult to the honesty of the American population.

8. Phrasing the conclusion more precisely, the DMI data confirm that as of 1978, the average number of weapons owned by families owning four or more of them was substantially greater than five weapons. The equivalent average as of 1968 is basically unknown, the calculation depending entirely on a guess about the midpoint of the "4+" range. There is strong inferential evidence, reviewed in Chapter Five, that this critical average--the average number owned by families owning at least one--may have itself increased substantially over the decade. Given this possibility, it would obviously be unwise to make inferences about the 1968 value on the basis of 1978 data.

CHAPTER THREE

RECENT TRENDS IN WEAPONS OWNERSHIP:

I. SPORT AND RECREATIONAL DEMAND

The Trend in Weapons Supply

Since the total number of weapons now in private hands is known only very approximately ( $\pm$  some 20,000,000 weapons), it follows that knowledge about trends in that number is even less reliable. There is a fairly uniform consensus among all observers that the total amount of private weaponry has increased in recent years, but estimates of the magnitude of the increase are, for obvious reasons, as variable as estimates of the total numbers. Our best guess about the total 1968 number, based on calculations in the previous chapter, is  $\sim 80 \pm 20$  million weapons; our best guess about the current (1978) number is  $\sim 120 \pm 20$  million weapons. Taking these figures seriously, the total trend over the past decade would therefore amount to something between 0 and 80,000,000 "new" weapons. The first problem one encounters in trying to analyze the weapons trend, in short, is that there is very little trustworthy information on just how extensive it has been.

Trend data on production and imports for the period 1900-1968 are given in Newton and Zimring (1969: Table 4-1). Between 1900 and 1948, an average of about 10 million firearms per decade (or roughly 1 million firearms per year) were added to the domestic supply. In the next decade (1949-1958), the figure roughly doubled (to about 20,000,000), and then increased by yet another 10 million (to roughly 30,000,000) in the decade 1959 to 1968. By far the largest increases, especially during the 1960's, were in handgun production and imports. And it is

the handgun increase in particular that lead Newton and Zimring to speak of the "domestic arms buildup."

The upturn in handgun supply during the decade of the 1960's was apparently quite pronounced. According to Newton and Zimring (1969: Table 4-1), total production and imports of handguns averaged roughly 2.7 million sidearms per decade up through 1949, jumped to 4.2 million for the decade 1949-1958, and jumped even more sharply, to 10.2 million, between 1959 and 1968. During the 1960's then, the total domestic supply of handguns apparently increased by about 1 million such guns each year.

The more recent production and import figures, covering the ten years since the Newton-Zimring compilation, show no abatement whatever of these long-term trends; on the contrary, they show an acceleration (Table 2-1). The projections undertaken in the previous chapter suggest that between 1969 and 1978, as many as 65 million new weapons may have been added to the domestic supply, roughly twice the number added during the previous decade. All evidence from the production and import figures therefore converges on the conclusion that the total number of weapons available to the private US market is substantially higher at present than at any previous point in American history.

This, it appears, is especially true of the total handgun supply. The update of handgun production and import figures (Table 2-1, above) shows roughly 2.4 million additional handguns available on the market each year (on average) since 1969, which gives a total increase of some 24 million handguns since the original Newton-Zimring report. Possibly more accurate data, shown below in Table 3-1, give an average annual increase of about 1,994,000 handguns. Over the last decade, then,

the gross increase in supply has been in the range of 20-25 million handguns. Interestingly, this is about the same as Newton and Zimring's estimate of the total number of handguns introduced into the US market from 1899 to 1968. It would thus appear that the total gross number of handguns available in the US has roughly doubled in the decade since the passage of the Gun Control Act of 1968, assuming, of course, that none of the pre-1968 handguns have since been taken out of use (an unlikely assumption).

The provisions of the 1968 legislation are discussed more fully in Chapter 14, below. In the main, the Gun Control Act of that year was designed to deal with interstate firearms commerce and with firearms importation. Although the actual legislative intent is somewhat unclear (see Cook, 1979b), the implementation of the 1968 legislation in essence amounted to a ban on imports of cheap, low-quality handguns, the so-called Saturday Nite Specials. This ban, however, did not extend to the importation of most of the parts from which such handguns are assembled, and it also did not extend to the domestic manufacture or assembly of such weapons.

Efforts to evaluate the effects of the 1968 legislation on the total handgun supply are hampered most of all by the lack of adequate time-series supply data (Zimring, 1975), especially as regards imported weapons, the major focus of the Act. Zimring notes that two Federal agencies now maintain data on handgun imports: the Bureau of the Census and the Bureau of Alcohol, Tobacco, and Firearms. Since 1969, both agencies have published estimates of handgun imports, and in the

five reporting years between 1969 and 1973, the average discrepancy between estimates was 162 thousand handguns (Zimring, 1975: Table 4). The ATF estimates, moreover, are always higher than the Census estimates, and the magnitude of the discrepancy is larger in more recent years. (In 1973, for example, the Census estimates a total of 309 thousand imported handguns, whereas the BATF estimate for the same year is 901 thousand.) One certainly hopes, along with Zimring, that "the two federal agencies in charge of compiling these data might attempt to resolve such a glaring discrepancy" (1975: 168).

Table 3-1 shows "best guesses" for handgun production and importation from 1960 to 1976; the figures differ slightly from those shown earlier in Table 2-1, but not in any major or serious way. Given the wide discrepancies in the data bases, none of the values reported in the table can be taken entirely seriously, but they do adequately indicate the rough magnitudes and give at least some crude "feel" for the effects of the 1968 legislation.

These data sustain several reasonably obvious conclusions. First, it is apparent that the 1968 legislation responded to a real and genuine problem. Between 1960 and 1968, the annual importation of handguns increased by some 900%--up from 128,000 imported handguns in 1960 to about 1.2 million imports in 1968. To speak of these handguns "flooding the domestic market" is therefore no exaggeration. Secondly, imports of handguns in the year immediately following the legislation, and in every year since, were drastically lower than the all-time high figure registered for 1968: from a 1968 base figure of 1.3 million, imports of handguns dropped to only 354,000 in 1969, to only 254,000 in 1970,

TABLE 3-1

## HANDGUN PRODUCTION AND IMPORTS, 1960-1976 (IN THOUSANDS)

	1960	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Domestic Production	475 <sup>a</sup>	666 <sup>a</sup>	700 <sup>a</sup>	926 <sup>a</sup>	1,259 <sup>a</sup>	1,367 <sup>b</sup>	1,394 <sup>b</sup>	1,421 <sup>b</sup>	1,667 <sup>b</sup>	1,609 <sup>b</sup>	1,715 <sup>a</sup>	2,024 <sup>a</sup>	1,883 <sup>a</sup>
Imports	128 <sup>a</sup>	347 <sup>a</sup>	513 <sup>a</sup>	747 <sup>a</sup>	1,155 <sup>a</sup>	354 <sup>c</sup>	254 <sup>c</sup>	352 <sup>c</sup>	366 <sup>c</sup>	605 <sup>c</sup>	259 <sup>a</sup>	462 <sup>a</sup>	270 <sup>a</sup>
TOTAL	603	1,013	1,213	1,673	2,414	1,721	1,648	1,773	2,033	2,214	1,974	2,486	2,103

<sup>a</sup>SOURCE: Statistical Abstract of the United States, 1975 (p. 156) and 1977 (p. 175).

<sup>b</sup>SOURCE: Zimring, 1975: Table 5.

<sup>c</sup>SOURCE: Zimring, 1975: Table 4. Numbers in all cases are the numerical average of high (ATF) and low (Census) estimates.

and these imports have averaged only about 365,000 per year since the 1968 legislation, about a third of the 1968 figure. These data suggest that the Gun Control Act of 1968 did achieve, at least in some substantial part, its objective of stemming the flow of "cheap imported handguns" into the domestic market; as Zimring says, the effect on handgun imports was "immediate and substantial" (1975: 169).

There was, however, very little effect on the total annual increase in the handgun supply. Much of the 1969-and-following losses from the import flow have been compensated by increases in domestic handgun production (and assembly). Total "new" handguns coming onto the market in the years 1969-1972 were indeed somewhat lower than the peak 1968 figure, but since 1973, the number of new handguns yearly has averaged ~ 2.2 million, more than 90% of the 1968 value. The overall effect of the 1968 legislation, then, was apparently not so much to reduce the total numbers of handguns available, but to cause some substitution of domestic for imported arms. And much of this "substitution" may well have amounted to cheap handguns assembled by foreign workers from foreign parts being replaced by cheap handguns assembled by American workers from foreign parts (Comptroller General, 1978: 4). Staring at Table 3-1, one gets the unmistakable impression that the 1968 legislation was something of a boon to the domestic arms industry, but probably little else. Despite the 1968 legislation, the best available data suggest that handguns are still being added to the US market at the approximate gross rate of two to two and a half million per year. And this, of course, is in addition to the annual growth in long gun supply, which has been averaging about 4 million weapons per year.<sup>1</sup>

Where have all these "new" weapons gone? What are the sources of the increased firearms demand? What do the trends and their sources reveal about the nature of private weaponry in the United States today? These and a range of closely related issues constitute the subject matter of this and the next two chapters.

The recent sharp upturn in weapons manufacturing and importation has been the occasion for much anxious hand-wringing in pro-gun-control circles. Even the phrases used to refer to the trend are typically alarmist: "the flood of guns," "the domestic arms buildup," "the domestic arms race," and so on. One author (Clotfelter, 1977) speaks of the "almost breathtaking increase in the stock of handguns." The persistent analogy drawn in these sources to the international arms race is presumably intentional: the imagery is often that the American population is arming itself for some sort of impending showdown. Just who the contending parties in this "showdown" will be is seldom made explicit, such matters being left to the reader's imagination, but the customary insinuation is that the parties in question are socially or ideologically defined: whites are arming themselves for a war against blacks, the "straights" are arming for combat against the counter-culturals, the victims (real or potential) are getting ready to shoot it out with the violent offenders, and so on.

The range of speculations implied in these accounts can be referred to, with due apologies to Hunter S. Thompson, as the "fear and loathing" hypothesis--namely, that the recent weapons trend is rooted, ultimately, in rising fears and anxieties about crime, unrest, rebellion, civil disorders, and the related pathologies of modern, especially urban, life.

This hypothesis has been advanced by a number of authors and has been the object of at least some research; the relevant studies are reviewed later in Chapter Five. In advance, however, we note that the surface plausibility of the hypothesis depends on an extraordinarily uncharitable depiction of the motives and psychology of a very substantial fraction of the American population. Taken to its extreme, the "fear and loathing" hypothesis suggests that tens of millions of Americans have, in the past ten years, gone out and purchased a firearm in the anticipation of possibly having to shoot somebody for some reason someday. Uncharitable or not, this may well have been the case, and certainly, little purpose is served in prejudging the issue. However, one would normally insist on very powerful evidence before advancing such a condemnatory conclusion, and one would also normally insist that all possible alternative explanations be given their due. In the following chapters, then, we give as much credence as the evidence allows to alternative hypotheses about the weapons trend, just because the "fear and loathing" explanation has such awesome and troubling implications.

#### Household Increase

Crudely, our focus in the ensuing trend analysis is on the decades of the 1960's and 1970's, the period of most rapid growth in firearms supply; most of the analysis focusses specifically on the most recent decade, the period between the initial compilation of weapons data by Newton and Zimring (1969) and the present. It is thus worth emphasizing that the size of the American population, and in particular, the number of U.S. households, grew quite substantially during this period, and

that raw compilations of production and import data (such as those in Tables 2-1 and 3-1, above) are typically not normed to take this increase into account.

The 1968 projections undertaken by Newton and Zimring are based on a total of just over 60,000,000 US households. Partly due to an increase in population size, and partly due to an increase in the rate of household formation, the number of US households at present is just about 75,000,000. The difference (15,000,000 "new" households) represents a 25% increase over the 1968 value. The implication is that the firearm supply would also have to have increased by some similar proportion in order for the average "density" of armament among U.S. families to remain constant in this period.<sup>2</sup>

As noted above, the number of "new" weapons that need to be accounted for in a trend analysis lies somewhere between none and 80 million. For convenience, let us take the midpoint of that range as the correct value, in which case we need to account for about 40,000,000 "new" weapons. This is rather fewer than the 65,000,000 figure suggested by the projections from Table 2-1 and the above discussion, but the 65 million figure represents only the gross increase in supply; to achieve a measure of the net increase, we have to subtract from the gross figure the number of weapons taken out of use during the period, including the fraction (roughly 10%) that is exported to other countries. (Some share of the new supply, in other words, must be seen as "replacement" supply for weapons that were "decommissioned" during the decade and some share was marketed elsewhere.) Since 80 million is our "best guess" value for the total number of weapons in 1968, and 120 million

our "best guess" for 1978, then the difference, 40 million "new" weapons, is our "best guess" as to the total weapons increase.

These numbers in mind, a simple calculation gives the amount by which the total weapons supply would have to have increased just to keep pace with the increasing number of households in the period. Since the rate of increase in the number of households was about 25% between 1969 and 1978, then the initial 1968 supply of weapons (80,000,000) would also have had to increase by 25%, or in short, by some 20,000,000 weapons. Another way to look at these numbers is that the first twenty million "net" weapons (i.e., those over and beyond the "replacement" weapons) produced or imported between 1969 and 1978 would be absorbed just among "new" households, assuming, of course, that rates of weapons ownership (and average numbers of weapons owned) would be the same for both "new" and "old" households. (That weapons ownership is not correlated with age tends to support this assumption; see Chapter Six, below.) The conclusion, then, is that perhaps as much as half of the "trend" in weaponry over the past decade is only a reflection of growth in the number of U.S. households. The true growth in supply net of the replacement proportion and net of that portion due just to household increase would therefore apparently amount to some 20 million, rather than some 40 million, or 65 million weapons.

On the other hand, even conservative projections show an increase in weapons supply substantially in excess of the 20,000,000 or so "new" weapons necessary to supply "new" families; the total growth has been roughly twice the growth attributable just to household increase. Growth in the number of households to be supplied is thus an important

part, but assuredly not the whole, of the weapons trend story.

These corrections in the trend for household growth can, of course, be applied to the type-specific trends as well as to the total (Table 3-2). The numerical values shown are taken directly from Table 2-5, above; the 1968 numbers are as reported in Newton and Zimring, and the "actual present values" are taken from the update of the Newton-Zimring numbers reported in Spiegler and Sweeney (1975). The "predicted present values" are calculated simply by adding 25% in each case to the observed 1968 values; the "excess" values are simply the differences between "predicted" and "actual" present values.

These "corrections" for household growth leave an excess of 22.5 million "new" weapons to be accounted for by other factors. This is the net growth in weapons supply over and above that necessary to keep pace with household growth. In the total, this represents a net growth of 25% in weapons supply over the 1968 values. As the table amply shows, this 25% net growth has two very distinctive components: a long gun component, whose growth was rather less than the total growth, and a handgun component, whose growth was sharply higher than the total growth. The excess present handguns amount to 42% of the 1968 value, vs. 18% and 20% respectively for the excesses in rifles and shotguns. We may thus agree, with many observers, that the growth in handgun supply over the last decade has been substantial and quite disproportionate to the total growth in households.

Once household growth has been discounted, then, the evidence suggests that a trend analysis needs to account for some 12-13 million excess long guns, and some 10 million excess handguns, over the last ten years.

TABLE 3-2  
THE WEAPONS TREND BY WEAPONS TYPE, DISCOUNTED FOR  
GROWTH IN NUMBER OF US HOUSEHOLDS

(in millions of weapons)

Type	1968 Value <sup>a</sup>	Predicted Present Value <sup>b</sup>	Actual Present Value <sup>c</sup>	Excess <sup>d</sup>	Excess as a % of 1968 Value <sup>e</sup>
Rifles	35	43.75	50	6.25	18%
Shotguns	31	38.75	45	6.25	20%
Handguns	24	30.00	40	10.0	42%
TOTALS	90	112.5	135	22.5	25%

<sup>a</sup>Newton and Zimring, 1969: 6.

<sup>b</sup> = the 1968 value + 25%.

<sup>c</sup>SOURCE: Spiegler and Sweeney, 1975: 3.

<sup>d</sup> = difference between "predicted" and "actual" present values.

<sup>e</sup>This column expresses the excess weapons as a percentage of the initial 1968 value, and is thus a measure of net percentage growth in the weapons supply as discounted for the growth in numbers of families.

Sport and Recreation Demand

Newton and Zimring, and most other commentators, acknowledge that at least some share of the trend reflects nothing more ominous than an increase in the popularity of sporting and recreational activities requiring firearms. As with the production of guns, for example, the production of clay pigeons approximately doubled during the 1960's; membership in trap and skeet shooting clubs also doubled during the same period (Newton and Zimring, 1969: 20). As they also point out, the percentage increase in expenditures for sporting weaponry and ammunition between 1960 and 1966 (72%) was almost exactly the same as the percentage increase in expenditures on fishing equipment and tackle in the same period. Some non-trivial fraction of the "domestic arms buildup," in short, apparently reveals more about leisure time preferences and pursuits than it reveals about the "fear and loathing" of the American population.

In general, the growth of interest in outdoor recreation over the past several years has been rather extraordinary. Some sense of the magnitude of this trend is imparted in Table 3-3, which reports time-series data from the Statistical Abstract on various outdoor sporting activities and expenditures from the early 1960's to the present. In 1960, as an example, there were some 79 million visits to the National Park system; by 1970, the figure had more than doubled to 172 million visits; and in the six years following, the visitation figure rose to 268 million, about three and a half times the number of visits registered in 1960. Visits to state parks show an equivalent trend in the period, having approximately doubled between 1960 and 1975. Between 1970 and 1975 alone, annual expenditures on recreation of all forms increased

TABLE 3-3  
TRENDS IN OUTDOOR RECREATION

	1960	1965	1970	1972	1973	1974	1975	1976
1. Visits to the Nat'l Park System (x 10 <sup>5</sup> )	79.2	121.3	172.0	211.6	215.6	217.4	238.8	267.7
2. Visits to State Parks (x 10 <sup>5</sup> )	259	391 <sup>a</sup>	483	---	---	---	566	---
3. Total Recreation Expenditures (x \$10 <sup>9</sup> )	17.9	25.9	41.0	49.1	55.2	60.8	66.0	---
4. Fishing Licenses Sold (x 10 <sup>6</sup> )	23.3	25.0	31.1	33.0	33.5	34.3	34.7	---
5. Hunting Licenses Sold (x 10 <sup>6</sup> )	18.4	19.4	22.2	22.2	23.3	25.1	25.9	---
6. Federal Duck Stamps (x 10 <sup>6</sup> )	1.6	1.6	2.1	2.4	2.2	2.0	2.2	---
7. Sport Fishermen and Hunting (x 10 <sup>6</sup> )	30.4	32.9	36.3	---	---	---	---	---
8. Recreational Vehicles Sold (x 10 <sup>3</sup> )	62.6 <sup>b</sup>	192.8	472.0	747.5	752.5	529.2	552.0	656.3

<sup>a</sup>Data for 1967

<sup>b</sup>Data for 1961

SOURCE: Statistical Abstract of the United States, 1977: pp. 232, 234, 235, 237, 643.

by some 25 billion dollars. The annual growth in hunting and fishing licenses issued is much less spectacular but nonetheless substantial: between 1970 and 1975, for example, the number of fishing licenses issued annually increased by about 3.6 million, and the number of hunting licenses, by about 3.7 million.<sup>3</sup> Note finally the trends in sales of so-called recreational vehicles--mostly campers and motor homes. Sales of these vehicles peaked just prior to the Arab oil embargo of 1973 and have been down noticeably ever since. Still, in 1976, some 656,000 of these vehicles were sold in the US market, ten times the number sold in 1961. All available indicators therefore suggest that the decade of the 1970's has witnessed a continuation, and in some cases an unmistakable acceleration, of the growth trends in outdoor recreation activities noted by Newton and Zimring for the decade of the 1960's.

All of the trends shown in Table 3-3 exceed that which would be expected just on the basis of population growth, even the relatively modest annual increases in hunting licenses issued. Trends in hunting, net of the general trend in population, are shown in Table 3-4. Note that since hunting licenses are issued to individuals, not to families, the appropriate norm in this discussion is the growth in total population, not the growth in total number of households, as in the earlier discussion.

For purposes of this table, we have created a measure of "Total Hunters" by summing, for each year, the number of hunting licenses issued and the number of Federal duck stamps sold. In raw numbers, the number of "total hunters," thus defined, increased by 3.8 million hunters between 1970 and 1975, from 24.3 to 28.1 million. The last

line of the table expresses these values as a rate per 1,000 population; as shown, the number of hunters per 1,000 population also increased between 1970 and 1975, from 119 per thousand in 1970 to 132 per thousand in 1975.

Table 3-4 permits us to calculate the amount by which the number of total hunters increased beyond that which would be expected just on the basis of population growth. In 1970, for example, the observed "hunter rate" was 119 per thousand. Had this rate remained constant, then the total number of hunters in 1975 would be  $119/1,000 \times 213$  million = 25.4 million, the "predicted" number of 1975 hunters. The observed value for 1975, in contrast, is 28.1 million hunters, an excess over the five years of 2.7 million hunters. This suggests that the number of "new" hunters (hunters in excess of that predicted from population growth alone) has averaged about 540,000 per year, or in other words, even discounting population growth, some half million additional individuals per year have taken up hunting. For the whole of the decade 1969 through 1978, then, approximately 5.4 million "excess" hunters have been added (540,000 excess each year over a total of ten years). If we assume that each of these new hunters outfits himself or herself with one and only one long gun, then these figures indicate that about 5.4 million of the total net growth of 12.5 million excess long guns, or about 43%, can be attributed just to the increase in hunters over the decade, leaving about 7,000,000 "new" long guns to account for through other factors.

These projections, moreover, are doubtlessly quite conservative, for a number of reasons. First, the measure of total hunters is in truth a measure of total legal hunters (i.e., a measure of hunting licenses

TABLE 3-4

TRENDS IN NUMBER OF HUNTERS PER 1,000 POPULATION, 1960-1975

Raw Data	In Millions		
	1960	1970	1975
Number of Hunting Licenses	18.4	22.2	25.9
Number of Duck Stamps	1.6	2.1	2.2
TOTAL "HUNTERS"	20.0	24.3	28.1
TOTAL POPULATION	180	204	213
Hunters/1,000 Population	111	119	132

SOURCE: Statistical Abstract, 1977: Tables 10 and 389.

Hunting data are the same as in Table 3-3 above.

and duck stamps issued). The number of people who hunt without a license, and the trend in the number, are obviously unknown, but it is at least possible that the growth in unlicensed hunting has exceeded the growth in licensed hunting, and if that were the case, then the share of the total trend attributable to increased hunting would be even higher than the 42% figure calculated above.

Secondly, our projection of 5.4 million "new" long guns due to "new" hunters is based on the assumption that each hunter is equipped with one and only one long gun. Since each hunter must have at least one gun, this too is obviously a conservative estimate; at least some hunters will outfit themselves with two or more guns.<sup>4</sup> The best and most recent evidence on numbers of weapons owned (the 1978 DMI survey mentioned in Chapter Two) suggests that the average number owned by families owning at least one weapon is something more than 3 weapons (precisely, 3.17); among families who own weapons and hunt, the average may well be higher.<sup>5</sup> If "new" hunters armed themselves at the average rate for all families owning at least one weapon, then the increase in demand for weaponry due to "new" hunters between 1968 and 1978 would be roughly 16.2 million weapons. This would amount to all of the net growth in long guns (12.5 million) and some 40-50% of the net growth in handguns (10 million) as well. Indeed, if the total excess weaponry is in fact 22.5 million weapons (as calculated in Table 3-2), and each "new" hunter armed himself or herself at the average rate of 3 weapons each, then the growth in demand due just to these "new" hunters would amount to about 72% of the net growth in supply of weapons of all types.

The idea that each "new" hunter would arm up with more than one weapon is by no means inconceivable. A rifle is an appropriate hunting weapon for some game (squirrels and deer, for example, are hunted with rifles), but shotguns are necessary for other game (for example, all bird hunting of any sort is done with shotguns, and fast-moving small game, such as rabbits, are also usually hunted with shotguns). A hunter wishing to shoot, say, squirrels and game birds would therefore require at least one rifle and at least one shotgun for the task. As the kinds of game to be hunted increase, the amount of necessary weaponry also increases. A deer rifle, for example, is virtually useless for hunting squirrels; a small-caliber rifle that would be used to hunt squirrels, likewise, would be virtually useless in hunting deer. In the same vein, larger shotguns (12 gauge or 16 gauge) are necessary for game bird hunting, whereas smaller shotguns (20 gauge or 410-gauge) are more appropriate for game such as rabbit. A hunter who chose, for example, to hunt deer, squirrel, rabbit, and pheasant (four of the more commonly hunted animals) would find it convenient to own at least four different guns. The idea that each "new" hunter would arm up with at least one rifle and one shotgun is therefore not implausible, in which case the demand for "new" long guns posed by "new" hunters works out to about 10.8 million, 86% of the 12.5 million gun excess.

Also, although handguns are not often used to hunt game, they sometimes are; and even if they are seldom used by hunters to take game, they are, nonetheless, often carried by hunters and other outdoors sports persons along with long guns, typically for use against the snakes that one sometimes encounters when traipsing through the woods. In some respects, a quality sidearm is part of the standard regalia for the de rigeur

sportsman, and thus falls in the same class of objects as a good hunting knife, a hunting jacket, an ammunition belt, and the related superfluties that no serious huntsman would ever be without. Thus, the idea that "new" hunters also account for at least some share of the increase in handgun demand is also not, by any stretch, inconceivable.<sup>6</sup>

The preceding depicts hunting mainly as a leisure or recreational activity, but not all hunting is appropriately characterized in this fashion. For some, rather, hunting is an activity that generates "income in kind," or in other words, an activity undertaken to augment the family's protein supply. There is, in fact, some evidence to suggest that "meat hunters" (persons who hunt primarily for the food) are the modal type (Kellert, 1978.)<sup>7</sup> In this study, conducted for the US Fish and Wildlife Service, meat hunters represented some 44% of all the persons in the sample who had hunted in the previous five years. "Sports hunters" were the second largest category, representing 39% of the total; these are the people who hunt primarily because it gets them out of doors and affords them an opportunity to display their marksmanship and outdoors prowess. Finally, there are what Kellert calls the "nature hunters," representing the final 17%, who hunt primarily for inner-directed, virtually mystical, reasons; as one of them, quoted by Kellert, expresses it, "It's death that makes the spark of life glow most brightly, measure for measure." These findings suggest that perhaps no more than about half of all hunting is appropriately characterized as "recreational." The remainder apparently has more utilitarian motivations.

In this vein, it should also be pointed out that, while it is possible to spend very large sums of money on high-quality hunting

weapons, perfectly serviceable weaponry can be purchased for very modest amounts. Current winter catalogues for both Sears and Penney's, for example, list several models of rifles and shotguns that retail for less than \$100; both also show a single-shot .22 caliber rifle (of the sort that might be used, for instance, to hunt squirrels) that retails for less than \$35. Ammunition is also relatively inexpensive; a box of .22 caliber "longs," useful for small game, retails for less than \$3. Hunting licenses rarely cost more than \$10. If one did not care about being a truly stylish hunter and went about it as cheaply as possible, it appears that one could start from scratch and purchase an entire season of, say, squirrel hunting--weapon, ammunition, and license--for less than \$50. This sum is substantially less, for example, than what the average skier would expect to spend in one week-end on the slopes, much less than what a serious flyfisher would expect to pay for a decent graphite rod, very much less than the price of a snowmobile, and so on. If one were interested in getting outdoors and actually doing something once there, hunting appears to be potentially one of the cheaper ways to do it.<sup>8</sup>

The relatively small sums of money necessary to take up hunting, and the evidence from Kellert that much of it is undertaken mainly to procure food, suggest that at least part of the recent increase in hunting, and the corresponding increase in demand for weaponry, may be attributable to many of the same factors that have recently sparked interest in vegetable gardens and wood stoves, namely, the decay of the domestic economic situation. Growing vegetables, heating with wood, and hunting for meat are all "labor intensive" activities, requir-

ing relatively modest initial capital outlays, whose results make at least some difference in a family's overall financial circumstances in troubled economic times. All three activities also have direct "use value," that is, they are intrinsically enjoyable leisure-time pursuits, whether they "bear fruit" or not. It is thus possible that some (possibly large) share of the "domestic arms buildup" is only a utilitarian response to a decaying domestic economy.

Hunting is the most common, but by no means the only, sporting activity requiring firearms; others include target shooting, gun collecting, skeet and trap shooting, and so on. The trend data on hunting are at best thin, but published trend data on other sporting uses of firearms are practically nonexistent, except for the few fragments compiled by Newton and Zimring (1969). Thus, any effort to discount the overall weapons trend for sporting uses of firearms other than hunting is a very inferential and perilous activity. However, there is at least enough information to piece together a rough guess about the approximate magnitudes.

In this case, the relevant information is taken from the 1978 DMI survey. One of the items in the survey, asked of gun owners only, read as follows: "I have a list of reasons why people own guns. Please listen while I read it and then tell me the most important reason you have a gun." Results obtained from this item are discussed more fully in a later chapter. For present purposes, we note that 54% of the gun owners who answered the question gave hunting as the most important reason; 10% said target shooting, 7% indicated gun collecting, and the remainder gave a variety of other non-sporting (mostly self-defense) answers.

The total sporting responses other than hunting were therefore 17%, and this is just about a third of the proportion who mentioned hunting specifically. From this it can be inferred that the total number of persons engaged in shooting sports other than hunting is about a third the total number of hunters. If, in turn, our Table 3-4 guess about the total number of hunters is correct (28.1 million in 1975), then there would have been about 9.4 million additional firearms sports-persons (collectors included) in the same year, etc.

Again, we can use these numbers to project an "excess" of sports shooters and collectors. In order to make such a projection, we assume that the disproportionate rate of increase (over population growth) observed for hunting was matched by an exactly equivalent net rate of increase in other gun sports. If this was the case, and all the other necessary assumptions are also met, then we would guess that in 1970, there were 8.1 million non-hunting sports shooters or collectors (1/3 of the 24.3 million hunters estimated for the same year). This amounts to ~ 39.7 per 1,000 population in 1970. At the same rate, the "predicted" number of sports shooters and collectors in 1975 would have been about 8.5 million ( $39.7/1000 \times 213$  million population), whereas the direct calculation of this number showed about 9.4 million (one-third the observed number of 1975 hunters). These calculations-- although admittedly very "iffy"--therefore suggest an excess of some 900,000 sports shooters over five years, or an excess of some 1.8 million over the whole ten-year period from 1968 to the present. Again, assuming one and only one gun per each of these excess sports shooters or collectors, the net growth in this category would account for some 8% of the

total net increase in weapons supply of all sorts (1.8 million divided by the total net excess of 22.5 million = 8%).

While it can be assumed that most (but not all) of the "new" hunting demand would be concentrated in the long gun category, the same cannot be assumed about the "new" demand for weaponry for gun sports other than hunting. The DMI materials discussed above are presented in two parts: one part showing the responses for all gun owners (results from which were mentioned above), and a second part showing responses for handgun owners only (as discussed in footnote 6). The proportion of handgun owners mentioning "target shooting" as the primary ownership reason was 17%, close to twice the 10% figure registered for all gun owners irrespective of type. Likewise, the proportion mentioning "gun collection" among handgun owners was 14%, or twice the 7% figure registered for all gun owners. From this, it can be safely inferred that some substantial share of the "new" gun demand posed by "new" non-hunting sportspersons would definitely be a handgun demand, or in other words, that some share of the excess handguns as reported in Table 3-2 has been absorbed by net growth in the non-hunting gun sports.

Consider, for example, the matter of handgun collections. Collecting handguns is evidently a rather popular activity. According to the DMI survey, 23% of the nation's families possess a handgun, and of these families, 14% mention "collecting" as the primary reason. Thus, some 3.2% of the nation's families ( $.23 \times .14 = .032$ ) would qualify as "handgun collectors" by these admittedly rough standards. Working from a base of 75 million families, this figure gives 2.4 million handgun collectors as of 1978. For obvious reasons, the typical hand-

gun collector would tend to own and acquire handguns at something more than the average rate. If each of the 1978 handgun collectors added just two handguns to their collection in the previous ten years, then collecting alone would account for nearly half of the excess handgun supply projected in Table 3-2. Also, as noted above, "target shooting" is given as a reason for owning a handgun somewhat more commonly than it is mentioned as a reason for owning a long gun, so at least some of the growth in target shooting, as well as collecting, would also result in an increase in the handgun demand. The essential point here, in short, is that any new demand for weapons posed by increases in sporting or recreational uses of firearms would not necessarily be restricted to a demand for long guns; part of this new demand would be a handgun demand as well.

It might, of course, be objected that the typical short-barrelled, small-caliber, cheaply made Saturday Nite Special is not an appropriate weapon either for collecting or target shooting, and it is also not the kind of sidearm that hunters would usually be interested in carrying. (But see note 6, below.) So far as we know, however, nobody has ever studied the kinds of handguns that handgun collectors collect, and so the assumption that they do not collect Saturday Nite Specials is gratuitous. These days, people collect empty beer cans, old comic books, Beatles memorabilia, and thousands upon thousands of other commodities of dubious cultural value, and this being the case, it is perfectly obvious that many people might collect Saturday Nite Specials as well. A more serious problem is that nobody knows for certain (or even to a first approximation) just how many Saturday Nite Specials

there are in Table 3-2. There is, first of all, no agreed-upon definition of just what a Saturday Nite Special is (e.g., Cook, 1979), and even if there were, the available supply data are not sufficiently detailed in terms of cost, caliber, quality of construction, barrel-length, etc., to estimate the proportion of "new" handguns that are indeed SNS's. We can thus agree that sport and recreation uses probably contribute relatively little to the demand for SNS's, but we cannot say just how many handguns fall into this category.

All the preceding projections are, of course, distressingly speculative, but the hard evidence needed to make them something other than speculative simply does not exist. It is therefore impossible to state precisely just how many of the net "excess" guns should be attributed to sport and recreational demand. Our projections suggest a total of ~7.2 million "new" shooters over the decade (hunters and non-hunters combined). If these new shooters all acquired weapons at the average rate shown in the DMI survey (=3.17 guns each), then the total demand growth is for 22.8 million weapons, or in short, for 100% of the net growth that remains once household increase has been taken into account. At the outer bound of possibility, the suggestion is that household increase and disproportionate growth of interest in the shooting sports account for all of the decade's weapons trend, handgun and long gun alike. If, alternatively, all these new shooters armed up at the average rate of 2 guns each, the total ensuing demand would be for about 15 million weapons--or all of the remaining excess long guns and about a third to a half of the remaining excess handguns. Factoring out the demand increase due to sport and recreational growth

therefore leaves no more than a few million long guns, and probably not more than about 5-8 million handguns, to be accounted for by other factors.

Summary

Between 1969 and 1978, roughly 65 million "new" firearms were either manufactured domestically or imported into the United States. Some of the domestic production was exported to other countries, and some of the remaining "increase" in supply must be seen simply as a supply of "replacements" for weapons taken out of use permanently (through confiscation, obsolescence, or decay) over the decade. These factors apparently leave an initial gross increase in firearms supply amounting to about 40 million guns.

Over the same decade, the number of U.S. families increased by about 25%. In order to maintain a constant average density of weapons ownership across families, the 1968 supply (of about 80 million guns) would also have had to increase by about 25%, or by about 20 million guns, and this amounts to half of the initial gross increase of 40 million.

Over the same decade, the proportion of U.S. citizens using firearms for hunting and other sporting purposes also increased, and various pieces of evidence and some (plausible, although typically untested) assumptions suggest that the consequent growth in sporting demand for weapons amounted to essentially all the remaining net growth in shoulder weapons and a third to a half of the remaining net growth in handguns.

Explaining the remaining "excess" weapons is the topic of the following two chapters.

FOOTNOTES

1. For a very similar analysis of the 1968 legislation and its effects on firearms supply, see Jerry Landauer, "Gunmaking Booms in the US....," in the New York Times 8 June 1971: 40 ff. As a minor historical aside, we note that Landauer's main informant for the article is one G. Gordon Liddy, at the time the Treasury Department's resident in-house firearms expert.
2. The 25% increase in number of households is, of course, substantially larger than the growth of US population during the period. For purposes of the present analysis, we are thus assuming that households are the relevant ownership unit for private firearms, not specific individuals. Given that the available survey data on weapons ownership deal almost exclusively with household ownership, we have very little alternative to this assumption.

The sharp and disproportionate increase in the number of US households reflects mainly that the baby-boom post-war generations finally began to reach the stage of household formation during the period in question. (The vanguard of the baby boom was the 1947 generation, which turned 25 in 1972.) The baby boom has posed supply problems for virtually every institution it has touched in the whole of its history: it was responsible for the very rapid growth in elementary and secondary education in the 1950's and the growth of higher education in the 1960's, it has posed very formidable unemployment and underemployment problems, as well as very serious housing shortages, in the 1970's, and it is only a matter of time before the baby boom creates a national shortage of burial space.

Part (by our analysis, nearly half) of the recent net upsurge in weapons supply reflects nothing other than the coming of age of these generations--their collective achievement of a stage in the life cycle where household weapons purchases would begin to be considered.

For the record, following are data from the Statistical Abstract (1977: 42) on the numbers of US households:

<u>YEAR</u>	<u>MILLIONS OF HOUSEHOLDS</u>
1960	52.6
1965	57.3
1970	62.9
1975	71.1
1976	72.9
1977*	74.4
1980*	78.8

(\* = projected)

3. Newton and Zimring (1969: Table 4-4) also report trend data on hunting licenses issued; their values are rather lower than the values shown above in Table 3-3. For example, their 1965 value is 14.3 million licenses, versus our 1965 value of 19.4 million--a discrepancy of some 5 million hunters. Independent evidence suggests that our (higher) numbers are the more accurate. In the same year (1965), Gallup asked a national sample, "Do you [or your spouse] go hunting?" Roughly 36% of the sample responded "yes." Assuming one hunter per household and about 60,000,000 households, this

finding therefore gives .36(60 million) = 21.6 million hunters in 1965. Newton and Zimring conclude from their data that "the number of licensed hunters...has remained relatively stable since 1958" (1969: 20). This has not been true in the years since 1968, however; the data in Table 3-3 show an average annual increase in licensed hunters for the period 1970 to 1975 of just under 1 million new hunters per year. The recent hunting trends are discussed in detail in the text.

4. We are for present purposes simply ignoring the (presumably small) numbers who hunt with something other than firearms, for example, bows and arrows.
5. We say, "may be higher," because it is not possible to confirm that numbers of weapons owned by hunting families is in fact higher than the numbers owned by non-hunting families. The DMI data would be useful in addressing this (and many other closely related) issues, but so far, the National Rifle Association has refused to release the data for secondary analysis. Several other surveys contain both a gun ownership question and a hunting question, but none of them ask specifically about the number of weapons possessed.
6. In the pro-control literature, one often hears it said that there is "no legitimate sporting use" for handguns, with the possible exception of plinking and target shooting. In point of fact, even a very cursory examination of the gun-sport magazines (for example, Guns and Ammo, Gun World, Field and Stream, or any of perhaps 25 others) will confirm that handguns are used for all kinds of sporting and recreational purposes. In the DMI survey, handgun owners were asked why they owned a handgun. Although "self-defense" was the

most common answer, given by 40%, some 9% mentioned "hunting" as the "most important reason," another 17% mentioned "target shooting," 14% mentioned "gun collection," and 6% said they "just like to have one." The total number of sport or recreational mentions (hunting, target shooting, and collecting) therefore approximately equals the number of self-defense mentions, or in other words, the number of handguns possessed primarily for "legitimate" sporting purposes probably rivals the number owned for "illegitimate" self-defensive purposes.

Virtually every issue of every gun-sport magazine will contain one or more reviews of various sporting handguns. Most of them also run occasional pieces on so-called "trail guns," these being the small, readily concealable handguns that one would typically never associate with legitimate sporting uses. One of these discussions ("Pack a Trail Gun," by Claud Hamilton in the December 1979 issue of Gun World) enumerates the reasons why an outdoorsperson might always want to carry such a weapon: "encounters with dangerous wild creatures"-- specifically snakes, angry wolverines, rabid foxes, and so on; "your ability to signal for help" in the case of a serious accident; "also, if you would ever be plunged suddenly into a survival situation without transport or food, a handgun can put food in the pot when it is desperately needed;" and so on. Similar themes can be found in any of a very large number of "trail gun" articles that are run, month in and month out, in all the major gun magazines. Anyone who bothers to read these magazines will quickly agree with our conclusion, that sporting and recreational uses would definitely account for at least some share of the

handgun trend.

Some of the most enthusiastically reviewed "trail guns" are the very small, relatively cheap, short-barrelled, readily-concealable, small-caliber, foreign-made handguns that are, in some circles, treated as virtually synonymous with "crime gun" or "Saturday Nite Special." Hamilton's (1979) article on trail guns is especially informative on this matter. In general, he notes, "a trail gun ought to be the lightest in weight, smallest in size, and, if possible, made of stainless steel." He adds, "the first choice of many would be the light frame .22 long rifle pistol or revolver..." "An alternative," he continues, "...is pocket pistols as trail guns. These mostly European-manufactured pistols are usually encountered in .32 or .38 ACP caliber. I have to admit that when it comes to small size and compactness they beat out even the little .22s." Continuing with the theme, "these are invariably pistols of the finest craftsmanship and beautifully made. These little pistols are at best short-range point-and-shoot affairs not intended for work beyond about seven yards." Concerning the little .22 handguns, Hamilton notes that they "have a lot going for them. Most of the decent ones are accurate and can be fine small game getters." And so on. Our purpose here, of course, is not to wax rhapsodically about the wonders of little pistols, but merely to point out that the oft-encountered assertion--that these kinds of handguns have "no legitimate sporting or recreational purpose"--is very insistently contradicted by the testimony of persons who use exactly these kinds of guns for sport and recreation all the time.

On the same theme, it can be noted that hunting with handguns, while perhaps not yet commonplace, nonetheless does occur, perhaps at a growing rate. Most states at least allow hunting with handguns, and some of them have recently set aside special seasons specifically for this purpose (just as many states have special bow-hunting seasons). The reason for hunting with a handgun would presumably be much the same as for hunting with a bow, namely, that it increases the sport of the hunt, allows one to demonstrate a higher degree of prowess with the weapon, and so on. It can also be mentioned that there is now a rather wide assortment of handguns manufactured and marketed specifically for hunting purposes, e.g., single shot pistols in large calibers and with long barrels, all of which would be essentially useless for "self-defense." (A related point concerning the self-defense theme is that much of the more "ominous" handgun equipment currently being manufactured -- e.g., the .357 and .44 Magnums (the "Dirty Harry" guns) -- have extremely limited self-defense applications. Their general size and weight make them difficult to aim quickly and accurately, and the muzzle velocities involved typically create a sharp recoil that would cause most shooters to flinch, and these characteristics render them virtually without value as "protection" guns.)

7. We have been unable to procure a copy of the Kellert report; the following discussion is based on a summary of the report published by Sports Illustrated magazine, 2 January 1979.
8. Along these same lines, Bruce-Biggs (1976: 38) has pointed out that the price of firearms has dropped considerably, relative to

average incomes, over the 20th century. The standard of comparison in this case is the classic Winchester 94 deer rifle, which has been in continuous production (in approximately the same form) since 1894. In 1900, the price of the Winchester 94 was 2.5 times the average worker's weekly take home-pay; in 1960, 91% of the average weekly pay; and in 1970, only 75% of the average weekly pay.

CHAPTER FOUR

RECENT TRENDS IN WEAPONS OWNERSHIP:

II. THE POLICE DEMAND FOR ARMAMENT

The production and import data we have taken as the measure of trends in supply exclude military weapons but they do not exclude weapons manufactured for, shipped to or purchased by Federal, state, local, and private police. The present chapter therefore considers the question, what share of the remaining "excess" weapons has been absorbed by enhanced armament demands among public and private police?

An advance caveat is again in order. There is, on the whole, relatively little distinction between the police arms market and the more general private firearms market. Many policemen purchase their official arms as private citizens, not as police officers; even among the fifty largest departments, more than 20% do not supply a regulation-issue sidearm for their officers. Thus, much of the police demand for small arms is contained within the more general private demand that has been considered in the previous two chapters. Specifically, police armament is reflected in the existing supply side data, and would also show up in the demand side (that is, survey) data as well.

The possibility that police demand accounts for a nontrivial fraction of the total demand increase has not been seriously considered by anyone. There is very little reliable information on police arsenal or armament policies, and virtually no hard information on any recent policy trends. Our effort to discount the total demand increase for enhanced demand among the police is therefore even more speculative than the discounts undertaken in the previous chapter. Still, there is more than ample

evidence that police demand for weaponry has increased quite substantially and represents a sizable fraction of the total demand growth.

Increased police weapons demand necessarily arises from two sources: first, increases in the total numbers of armed police officers, and secondly, increases in the average numbers of weapons with which officers are armed. The first can be called the "personnel" trend, and the second the "armaments policy" trend. Neither of these can be estimated in any precise quantitative way, but fragmentary data strongly suggest that both trends have been sharply upward over the past ten years.

The Personnel Trend

Table 4-1 shows indicators from various governmental sources on the personnel trend among U.S. public police during the 1970's. These data confirm that public police expenditures and employment have increased dramatically in the last decade. (There has been a parallel and possibly even sharper increase in the number of private police as well, which would also enhance to some extent the growth of "legitimate" weapons demand. The growth of private police, however, is not considered in this chapter. See Kakalik and Wildhorn, 1971, and the National Advisory Committee on Criminal Justice Standards and Goals, 1976, for exhaustive studies of US private security forces.) Between 1970 and 1975, for example, total expenditures on criminal justice at all governmental levels doubled. During the same period, gross total employment in criminal justice increased from 852,000 to 1,129,000, roughly a 33% increase. Figures for total police employment show similar trends: between 1970 and 1975, the total number of police (at all levels) increased from 548,000 to 670,000--a 22% increase--and all other indicators show the same general pattern.

TABLE 4-1  
INDICATORS OF THE "PERSONNEL TREND" AMONG U.S. PUBLIC POLICE

	YEAR							
	1965	1970	1972	1973	1974	1975	1976	1977
1. Total Expenditures on Criminal Justice, all government levels (in billions of \$\$) <sup>a</sup>	4.57	8.57	11.72	13.05	14.95	17.25	----	----
2. Gross Employment in Criminal Justice <sup>a</sup>								
TOTAL		852				1,129		
in 1,000's								
Federal		61				98		
State		175				274		
Local		617				757		
3. Police Employment Only (in 1000's) <sup>a</sup>								
TOTAL		548				670		
Federal		40				70		
State		57				100		
Local		451				499		
4. State and Local Police and Corrections Employment (1000's) <sup>b</sup>								
Police	349	450	486	511	539	556		
Corrections	111	142	178	187	203	214		
TOTAL	460	592	664	698	742	770		
5. Full-time Law Enforcement Officers (1000's) <sup>c</sup>							411	418 437

<sup>a</sup>SOURCE: Statistical Abstract of the United States, 1977: Table 297.

<sup>b</sup>SOURCE: Ibid, Table #299.

<sup>c</sup>SOURCE: Uniform Crime Reports, 1975 (p. 221), 1976 (p. 223) and 1977 (p. 222).

Unfortunately, although all trend series show the same general pattern, none of them give a precise numerical estimate of the trend over the last decade in the total number of armed public servants of all sorts at all levels. Total police employment would obviously include some fraction of unarmed personnel (clerks, custodial, EDP staff, etc.); likewise, some fraction of armed public servants would not be in police employment (e.g., prison guards, Treasury agents, etc.) A further complication is the often wide discrepancies among the various trend indicators. For example, Panel 3 of the table shows 508 and 599 thousand state and local police employees in 1970 and 1975, respectively. Panel 4 gives figures of 450 and 556 thousand respectively, a discrepancy amounting to ~ 40-50 thousand police. In the same vein, the 1977 UCR estimate of sworn full-time police officers is 437,000, whereas a secondary analysis of LEAA's machine readable data gives 551,000, a discrepancy of about 110 thousand police. It would thus appear, remarkably, that the actual number of American police is itself only known to within about ± 50,000 officers.

In the face of these uncertainties, what estimates can be made of the total police personnel trend in the decade? We begin with some findings from a recent survey of police departments, known as the "Police Equipment Survey of 1972" (PES72). The survey is based on a known 1972 universe of 12,836 state and local departments; the sample design was stratified by LEAA region and by departmental size and generated a total N = 528 departments, of which 444 returned the questionnaire, a respectable response rate of 84%.

Part of PES72 deals with "Handguns and Handgun Ammunition" (Bergman, Buntin, and Klaus, 1977). The survey contained several questions on

handgun use among police officers, and these questions were used to estimate the number of "officers carrying... handguns in U.S. police departments on duty" in 1972 (1977: Table 1-3). The estimate, weighted properly so as to remove sampling disproportionalities, is 484,752, or, let us say, 485 thousand handgun-armed state and local policemen.

As it happens, this estimate is within a thousand of the total state and local police employment data reported in Panel 4 (Table 4-1) for the same year. This correspondance suggests that we may take the trend data from Panel 4 as a close approximation to the actual increase in numbers of armed on-duty police officers over the decade. Thus, in 1970, our guess is that there were 450,000 armed, on-duty state and local police; in 1975, the corresponding guess is 556,000--an increase of 106,000 over five years and a projected increase of 212,000 over the decade. To estimate the total increase in armed public servants at all levels, we have only to add (i) increases among Federal police, and (ii) increases for all categories of armed public servants other than armed on-duty police officers.

Panel 2 of Table 4-1 shows total criminal justice employment at state and local levels to have been 1,031,000 in 1975; our guess is that this includes 556,000 armed police. At state and local levels, then, the proportion of armed officers to total criminal justice employment is about .54. If the same proportionality holds at the Federal level, then there would have been about 53,000 armed Federal police in 1975 (54% of 98,000 Federal criminal justice employees) and about 33,000 in 1970, an increase of ~ 20,000 over five years, or ~ 40,000 over ten years. Adding these Federal police to the previous total thus gives an overall growth of some 252,000 over the decade.

The proportion of corrections personnel (other than police) who are armed while on duty appears to be unknown. If the proportion is on the order of 10%, then state and local corrections personnel alone would add some 20,000 to the previous totals, and there would also be some increase in the corresponding Federal category as well. These considerations therefore suggest, as a conservative estimate, a total increase between 1969 and 1978 amounting to ~ 250,000 men--a quarter-million new police in the last decade.

Projecting the demand for new weaponry that this personnel trend poses therefore requires only that we know the average rate at which new policemen are armed. However, there is very little evidence on this topic. The following account is pieced together primarily from three sources: (i) the PES72 survey, (ii) a somewhat similar 1977 mail-back survey of the 50 largest departments done by the Police Foundation (Heaphy, 1978); and (iii) a review of articles, notes, and advertisements in roughly the last five years of The Police Chief magazine (official publication of the International Association of Chiefs of Police).

The standard service sidearm of American police is the .38 caliber revolver with a four-inch barrel--the famous "Police Special." In PES72, about 80% of all officers were armed with .38 Special handguns. The second most popular service sidearm is the .357 Magnum revolver, carried by 17%, with only small fractions carrying other weapons. As a "first cut" through the probable armament of 250,000 "new" police, then, we assume at least one service sidearm each.

The 1977 Police Foundation survey shows similar results. Again, the .38 caliber revolver is by far the most commonly prescribed on-duty

weapon, used in 44 of the 50 largest departments. However, 14 of the 50 list some other handgun as well -- either as the required sidearm or as an acceptable alternative. Also of interest, eleven of the fifty require officers to supply their own sidearms; outside the fifty largest, one assumes this proportion would be even higher.

Many officers, of course, carry additional weapons while on duty as "an added safety factor" (Eastman, 1969: 285). The reference is to concealed handguns carried to provide back-up firepower if the officer is disarmed of his service revolver or if it fails to operate for whatever reason. Unfortunately, there is no reliable information on the proportion who routinely carry backup handguns, but some fragmentary evidence suggests that the proportion is probably very high:

(i) Both concealable handguns and the leather with which to carry them are featured in the armaments advertisements of Police Chief Magazine. The October, 1977, "equipment issue" has four advertisements for leg holsters and one for a leather police boot with a built-in holster, all designed and marketed explicitly for concealment of backup handguns.

(ii) There is much evident concern among arms manufacturers for designing, building, and marketing the "ideal" concealable police handgun. One article in Police Chief, entitled "Design Evolution of the Detonics .45 ACP," discusses Detonic's "quest for the so-called ideal police handgun" (Marlow, 1977: 30), i.e., one small enough to be concealed, yet with adequate "stopping power" and "intimidation value" (two of the manufacturers' favorite euphemisms). Photographs show that Detonics' .45 ACP pistol is no larger than a man's hand, yet combines "the brute force of a .45 automatic in a handgun the size of a snub nosed .38 revolver"

(1977: 32). One assumes that arms manufacturers try to develop these concealable police weapons because a sizable market for them exists.

(iii) Several articles in The Police Chief and other police publications over the past five years have discussed the problem of murdered police officers. In 10-15 per cent of these cases, officers are slain with their own service sidearms, and carrying a backup weapon is one useful hedge against this possibility. Indeed, at least one article on "Gun Retention" (O'Neill, 1979: 22), published in the FBI Law Enforcement Bulletin, recommends the carrying of backup weapons as good police practice. "An auxiliary weapon, concealed and readily accessible, should be carried in the event the primary weapon is compromised." The understandable desire of police to be prepared for all eventualities would therefore suggest that carrying a concealed backup weapon would at least be strongly considered by most or all officers.

(iv) A very large fraction of all US police are required by departmental policies to be armed at all times, even when off-duty. In the 1977 Police Foundation survey, 24 of the 50 departments affirmed that "department policy requires officers to be armed off duty" (Heaphy, 1978), and all but three of the remaining departments said this was "optional." PES72 also contained an item on off-duty handgun use; 78% of the responding departments answered the question to the extent of providing data on the calibers of their officers' off-duty weapons (Bergman, Buntin, and Klaus, 1977: 19). In turn, the standard service revolver, because of its bulk and barrel length, is not well-suited for concealed off duty use; thus the proportion of police who own and carry a second, concealable, backup handgun must be very large indeed.

We therefore conclude--as a not unreasonable guess--that the standard in-service personal armament of US police consists of at least two handguns--one a service sidearm, and the second a smaller weapon carried concealed (or, at least, kept in readiness for off-duty use). Actual police armament, however, must average even more than 2 handguns per officer. Owing to the nature of police work, it is reasonable to assume that departments or officers themselves maintain some reserve supply of handguns, such that replacements are always at hand. Police handguns presumably wear out much more quickly than handguns owned by private citizens; for obvious reasons, one may also assume that even modest deteriorations in the condition of police weapons would cause them to be taken out of use. Also, police sidearms are carried daily and are thus subject to normal wear and tear, unlike the more typical private citizen's handgun, which presumably spends much of its lifetime in storage.

PES72 contains some information on the gun deterioration issue. A late, open-ended item asked about handgun problems encountered by police departments. About half the departments (45%) responded, and among them, problems with the revolver mechanism and cylinder were by far the most frequently mentioned. Examples include "cylinder had excess play," "weapon bought new and used approximately three months," and "after carrying this gun in a holster for several years, the rotating mechanism wears so much that the bullets do not line up with the barrel, causing a spray of lead to fly out of the side of the chamber" (1977: 23). Problems with "hammer/firing pin," "misfires," "trigger," and "age, wear and tear" were also commonly mentioned. The impression one gains from

these materials is that police handguns wear out rather quickly even if they are not often fired; the precision mechanisms and alignments apparently wear and foul just because of the normal jostling they receive being carried in the holster. Indeed, judging from the above comments, the lifetime of the average police handgun might well fall somewhere between several months and several years (in contrast to the 30 and 50 year halflives assumed for privately possessed weapons in Chapter 2).

Three apparently quite plausible assumptions--(i) that police strongly prefer not to be without a service handgun for any reason, (ii) that police handguns deteriorate at a relatively rapid rate, and (iii) that even minor "bugs" in the condition of a service handgun would cause it to be decommissioned--therefore suggest that most or all in-service police handguns are "backed up" with spares. If we assume that each personal police handgun is backed up (in this sense) with one replacement weapon, and that every policeman carries or possesses two handguns for which replacements might be needed, then each officer would account, on the average, for four handguns in total. The quarter-million new police projected earlier would under these assumptions represent a demand for ~ one million new handguns.

It is possible that this four-handguns-per-officer estimate is too high. Our guess that every officer carries or possesses at least two handguns is itself a liberal inference from the evidence, and our guess about arsenal backups is entirely a speculation. On the other hand, this estimate may also be much too low. For example, it appears that at least 75% (and conceivably much more than 75%) of all US police are required to be armed at all times, both on-duty and off; some additional

proportion presumably choose to be armed at all times even if not required. One therefore readily imagines that many officers own large numbers of handguns, each well-suited for some particular on-duty or off-duty use. In some respects, the need to be armed is a wardrobe problem which can be solved by owning a variety of weapons. Since more than 20% of the fifty largest departments require officers to supply their own sidearms, it is also evident that many policemen are "plugged into" the private handgun market; further, the police are presumably quite knowledgeable about and expert in the use of sidearms; and the police magazines literally swarm with advertisements for the newest handgun developments. The idea that many policemen would own large numbers of handguns for official or semi-official use is therefore not at all implausible, and this gives some indirect confidence that the "four-per-officer" average is probably not far off the mark.

A quarter-million new police would also cause some corresponding increase in the demand for police long guns as well. Less is known about police shoulder weapons than about police handguns. However, most police cruisers are outfitted with at least one shoulder weapon, and many are outfitted with very many more than one. The "Command Car" for Quincy, Illinois (a small city in central Illinois, 1970 population of about 45,000), for example, is outfitted with two "riot-grade shotguns" and a high-powered "anti-sniper rifle" with scope, plus several hundred rounds of ammunition for each weapon, plus, of course, the officers' personal handguns (Cramer and Scott, 1978: 69). Long gun armaments in Philadelphia's "Stakeout Cars" are even more substantial: according to one source, these Philadelphia police cars each carry two

M-70 Winchester 30/06 rifles with scopes and 200 rounds of ammunition, two M-12 Winchester 12 gauge police shotguns with 100 rounds of 00 buckshot ammunition, one 45 caliber Thompson submachine gun with 500 rounds of ammunition, and one 30 caliber M-1 assault carbine with 200 rounds of ammunition (Pinto, 1971: 74). Here too, Police Chief bristles with rifle and shotgun advertisements, and training in shoulder weapons is routinely included in virtually all police firearms training courses. It is therefore obvious that a quarter-million new police would also account for at least some of the growth in shoulder weapons.

The discussion to this point has dealt just with conventional police weapons, most of them the same weapons that ordinary citizens might purchase. Police are also armed, however, with a variety of more exotic weapons for which little or no private demand exists, e.g., automatic weapons (such as the Thompson submachine guns mentioned above), devices for delivering tear gas canisters, tranquillizer guns, and an assortment of chemical weapons (tear gas, Mace, and so on). It is not clear (and apparently cannot be determined) whether the production and import figures include these "exotic" armaments. There are, however, at least two reasons to assume that they might. First, many exotics (especially the tear gas and tranquillizer dart guns) are very similar to conventional guns in design, manufacture, and general outward appearance. Secondly, they are manufactured by the same firms that manufacture conventional police weapons. It is therefore at least possible that the supply figures include some fraction of exotic weaponry, the demand for which is almost exclusively concentrated among the police.

The Armaments Policy Trend

New police represent only the first of two potentially large increases in armaments demand; the second would be an increase over the decade in the average rate at which all police (new or old) are armed, or in other words, recent changes in standard police armament practices and policies.

Police armament practices have been the object of much outcry and some speculation, but surprisingly little research. There is, however, some reason to suppose that demand increases resulting from changes in police weapons policies are probably at least as great as, and conceivably much greater than, the increase resulting from the personnel trend.

The general context for the ensuing discussion is well-known and requires only a brief note here. The key event in police armament policies is Vietnam, in two related senses. First, Vietnam was a high-technology war, and in the years since the middle 1960's, much of the small arms technology developed for Vietnam has been transferred into domestic police arms. Secondly, domestic protest against the war, and a host of related disturbances, posed for police a set of combat or quasi-combat situations for which they were, in general, not prepared--in temperament, training, or equipment. The general trend in police arms policies since seems rooted in a determination that this potentially dangerous state of unpreparedness shall never again be.

Police response to the post-Vietnam realities evidences itself in many ways. Articles on police training, for example; tend more and more to emphasize topics such as stress training, crowd control, human and community relations, psychology, and so on; the current thinking

is that the cop on the beat should command the skills necessary to respond coolly and effectively to unconventional situations. But this has been accompanied by a parallel realization that, these days, the police also need to be prepared for virtually any combat situation they might, sooner or later, confront. The result appears to have been something very close to what has been called a "police arms race" (Steele, 1979: 33), that is, a sharp and recent increase in both the numbers and kinds of firearms routinely stocked by US police departments.

The direct observational evidence necessary to confirm this conclusion--for example, yearly data on police arsenals--does not exist, and so our case for a "more and better" weapons trend among the police is circumstantial. We can, however, demonstrate the following points: (i) There is a dazzling variety of new weaponry being developed and marketed for domestic police use. (ii) Both the arms manufacturers and the professional police journals promote this new weaponry as essential or desirable. (iii) During the period, the funds needed to buy into the "more and better" weapons market were amply available. These first three points demonstrate, in the language of criminal proceedings, both opportunity and motive for departments to get into the "police arms race." We also present (iv) "hearsay" evidence from presumably knowledgeable experts that something like a "police arms race" is indeed underway, (v) one piece of evidence suggesting that new police weapons innovations tend to diffuse quickly, and (vi) some fragments of direct evidence on actual changes in police armament policies, practices, and standards over the decade.

(i) That new weaponry is constantly being developed and marketed

for police use is instantly obvious from the arms advertisements appearing in journals such as The Police Chief. Virtually all arms manufacturers advertise their wares in these journals. For example, the October, 1977, equipment issue of Police Chief contains rifle, shotgun, and handgun advertisements from Smith and Wesson, Winchester Arms, Ruger, Detonics Incorporated, Dan Wesson, Ithacagun and many others--all touting this or that "new and improved" weapon. Remington Arms has a six-page "glossy" in the August 1977 issue introducing their new Model 870P police shotgun (headline: "More than Just a Shotgun...It's a 12-Gauge Law Enforcement System..."). These advertisements strongly suggest that manufacturers invest substantial sums in research and development of new police weapons--partly to equip police with the very best weapons modern fire-arms science can offer, partly, of course, to capture a share of what is clearly a very sizable market.

In some respects, marketing police arms is much like marketing any other consumer good. This year's model is invariably a "new, improved" version. Thus, the advertisements typically emphasize the better sighting characteristics of a new handgun, or the sturdier, more reliable construction of a new shotgun, or the greater accuracy and firepower of a new rifle, and so on. But in the marketing of police arms, there are at least two other considerations. First, the manufacturers consistently exploit an understandable desire to be equipped with the very best firearms available. In a combat situation, one never knows in advance what weaponry the "other side" will command, but one hopes it is not superior to the weapons available to the police. Since, in general,

the "other side" has access to the same weapons supply, the unmistakable conclusion is to arm the police with the newest, best, and most "improved" equipment--indeed, that it would be irresponsible to arm them with anything less. And secondly, one also cannot anticipate just what kinds of combat situations police might face, and this makes it possible to exploit a "What if..." mentality. For example, very few local police departments will ever encounter a sniper situation, but at least some will. What if your department is the one? Is it not best to arm up in advance with the appropriate weaponry? Again, would it not be irresponsible to do otherwise?

Another indicator of the rate at which new police arms are developed is that many gun magazines run either occasional articles or regular monthly columns reviewing the latest police weapons, and they do not seem ever to be short of material.

(ii) The implicit themes of the weapons advertisements are reinforced in the professional police literature, which is thick with articles of these sorts: (a) reviews of new weapons, (b) discussions of "unconventional" police situations (riots, hostage and sniper situations, and so on) where specialized arms might be useful or necessary, (c) articles on police weapons training, (d) descriptions of actual experiences where specialized weaponry was used to good effect.

For example, The Police Chief for October 1977 contains 36 articles, of which six deal specifically with weapons: there are two articles on police firearms training, one on the Monadnock Prosecutor PR-24 nightstick, a long article on police body armor, one article on a new police handgun,

and a brief item on "Handgun Control." The FBI Law Enforcement Bulletin also regularly features articles dealing with police weapons and fire-arms policies, as do virtually all other police journals and magazines.

"Professionalism" is, of course, something virtually all departments are concerned with, and one function of these journals is to keep local police informed about prevailing professional standards. In the weapons area, the "prevailing standard" is very much that, these days, a truly professional department should be prepared for all possible combat situations, much the same theme as the manufacturers themselves promote.

(iii) From 1969 to the present, the Federal government funnelled very large sums of money into state and local departments, mostly through the conduit of the Law Enforcement Assistance Administration. Between 1970 and 1976, LEAA allocations to departments averaged ~ \$750 million per year (United States Department of Justice, Sourcebook of Criminal Justice Statistics, 1977: 97). LEAA apparently does not know just how much of this was spent on arms purchases, but this use of LEAA funds was sufficiently common to have generated much controversy in the early 1970's. (See, for example, The New York Times 27 June 1972: 36 or 19 February 1973: 26.) Much of the controversy, to be sure, was focussed not on small arms, but on armored personnel carriers, police helicopters, even an occasional tank. The essential point, however, is that departments looking to upgrade their small arms arsenals, to buy some of the "new and better" weaponry, or simply to stockpile small arms supplies would have found ample Federal monies available.

In sum, for the period covered by our analysis, there were large numbers of new weapons being developed and marketed for police use, and

most police departments would have had both the reasons and the funds to purchase them.

(iv) That many departments in fact made these purchases, and continue to do so, seem to be common knowledge among authoritative sources who write about police arms practices for national publications. Articles dealing with police arms regularly refer, often quite explicitly, to a recent "more and better" weapons trend among the police. The phrase, "police arms race," is itself taken directly from an article in Guns Magazine for December 1979 (Steele, 1979), and similarly explicit acknowledgements can be found in many sources. A New York Times article on SWAT (see below), appearing on 14 July 1975, notes that "some policemen are arming themselves to the teeth in para-military imitation of the latest techniques introduced in the big cities." Another Times article (27 March 1977) on high-powered police arms makes explicit reference to "a nationwide shift [among the police] toward more powerful and more deadly weapons." A discussion of dum-dum bullets appearing in Newsweek Magazine for 9 September 1974 refers explicitly to "the increasing use of heavy weapons by the police." A report released in late 1974 by the Massachusetts Research Center and discussed in a Times editorial for 11 November 1974 remarks on a "definite trend towards more powerful bullets and weapons capable of shooting higher velocity bullets." And so on. Thus, police writers for publications as diverse as Guns Magazine and the New York Times agree that there has been some recent trend towards "more and better" police weapons.

(v) No one has yet systematically studied the diffusion of small arms technology among the police. Evidence on chemical weapons, however,

suggests that innovations tend to diffuse rapidly. The evidence is a survey conducted by the International Association of Chiefs of Police in 1970 that found, even at that early date, that four departments in five had already purchased at least some of the chemical spray weapons (e.g., Mace) then coming on the market. (See the New York Times, 22 February 1970: 88.)

(vi) There is some direct evidence on changes in police arms policies over the decade, all tending to confirm the general drift of our argument:

1. Standardization. State-wide standardization of local police policies is a central thrust in the "professionalization" movement, and in some states (for example, Oregon and New Jersey) this has meant a movement towards standardized police armament (see, e.g., Police Chief, March, 1976; or the New York Times 27 March 1977). No one knows just how widespread the trend towards standardized arms policies is. If it has been at all common, the implications for police weapons demand are potentially substantial, since every officer carrying a non-conforming firearm would be in the market for new weapons.

2. Officer Disarmings. Moorman (1976) and Giuffrida, Moorman, and Roth (1978) have analyzed the problem of officer disarming and subsequent slaying in some detail and make a plausible case that the Police Special service revolver is itself partly at fault. Virtually all Police Specials are double-action revolvers whose firing is a simple matter of "point gun, pull trigger." One solution is therefore to carry a sidearm whose firing is not so simple, for example, semi-automatic pistols, which must be cocked before they will fire, require

both hands to cock, and whose operation not everyone is familiar with. (Moorman [1976: 275] reports on 13 cases known to him "in which suspects forcibly took a semiautomatic from the uniformed officer but didn't know how to operate the weapon.") Moorman has conducted several surveys of California departments to monitor trends towards semiautomatic pistols. He reports that "the number of municipal and county law enforcement agencies that have mandated the 9mm [semiautomatic pistol] as the on-duty service sidearm for sworn uniformed personnel increased from 17 in September 1974 to 31 in January 1976" (1976: 275). The number of officers involved in this shift is from 1,677 to 3,463. "There are indeed," Moorman concludes, "an increasing number of semiautomatics being carried..." (1976: 275). No one knows whether this California trend generalizes nationally. If it does, the possible implications for police weapons demand are obvious.

3. Special Weapons and Tactics (SWAT). One of the most controversial instances of the Vietnamization of US police is the so-called Special Weapons and Tactics, or SWAT, team. Basically, a SWAT team is an elite police commando unit, modelled roughly on the Green Berets or Rangers, trained to deal with unconventional, especially combat, situations. Some SWAT squads predate the period under analysis, but SWAT is mainly a 1970's phenomenon. According to the New York Times (14 July 1975), there were about 500 SWAT teams "on line" in 1975; by 1977, there were about 3,000, with the number continuing to grow by perhaps 200 squads each year. The Times also notes that as of 1977, the FBI SWAT training program had "a large backlog of applicants."

The diffusion of SWAT to 3,000 departments is strong evidence for the "Be Prepared" mentality discussed previously. Few departments will ever encounter a SWAT-type situation over any reasonable time span; the Times articles on SWAT emphasize that most units are idle most of the time. But "...what if..?" Nicholas Fratto, Chief of Police for Cambridge, Massachusetts, expresses it thusly, "We think it [SWAT] is a good idea to have. We have a lot of very important people in Cambridge. In the event something happened, we would want to know what to do" (quoted in the Times, 2 May 1977).

One important characteristic of SWAT squads is that they are heavily armed. The standard team consists "of five officers armed with a high powered sniper rifle, automatic weapons, and shotguns" (Times, 14 July 1975). Given the number of squads, their recency, and the large amounts of weaponry involved, the contribution of SWAT to overall growth in police weapons demand is potentially quite substantial.

4. Hot Loads, Dumdums, and the Ammunition Controversy. A parallel to the search for the "ideal police handgun" is the search for ideal ammunition. The ammunition quest poses a definite minimax optimizing problem: one wants a bullet of sufficient weight and velocity to provide ample "stopping power," but not one so powerful as to pose a danger to bystanders through "over-penetration" or whose firing causes too much recoil or flinching. For years, the optimum police bullet was thought to be the low-velocity 158-grain .38-caliber cartridge, standard ammunition issue in most departments as of 1972 (according to the Police

Equipment Survey). Two widely-publicized studies done in 1974 and 1975, however, called this conventional wisdom into doubt.

The first, "the wounding effects of commercially available handgun ammunition suitable for police use" (DiMaio et al., 1974), was reported in the FBI Law Enforcement Bulletin. The report notes, "The .38 Special [the cartridge described in the previous paragraph] is the cartridge most widely used by police in the United States. In the past few years, many law enforcement organizations have expressed dissatisfaction with the wounding effectiveness of this cartridge. Because of this dissatisfaction, many organizations have begun using the new high velocity .38 Special loadings or have shifted to the use of other weapons, such as the .357 or .41 magnum" (1974: 6). (Note, again, the explicit trend acknowledgement.) Results confirm the noted dissatisfaction: "the traditional 158 gr round nose (RN) loadings for the .38 Special are relatively ineffective" and "the high velocity round is significantly superior" (1974: 6). The report, however, warns that "some of the high velocity loadings for the .38 should not be fired in small and/or alloy frame revolvers due to the extreme pressure developed" (1974: 8). From this warning it can be inferred that at least some departments who wanted to follow these recommendations would have to buy not just hotter cartridges but also weapons designed to handle them safely.

The study is especially enthusiastic about the 9 mm Parabellum cartridge, found to be "superior to most .38 Special loadings and a number of the .357 Magnum soft point and hollow point loadings" as well (1974: 5), i.e., superior to the ammunition then in use in virtually all departments. Departments interested in this "superior" cartridge would, of course, also need to buy 9 mm sidearms.

The study concludes with a strong endorsement of the 9 mm pistol: "We found that the 9 mm loadings are pleasant to shoot. In view of the wide range and the excellent performances of the 9 mm loadings, as well as the equality in wounding effectiveness with the .45 Automatic, the 9 mm is probably the best available caliber for police use, if a semiautomatic pistol is to be used" [1974: 7, our emphasis]. According to PES72, fewer than 1% of US police used 9 mm weapons in 1972, so any movement to arm them with "the best available caliber" would create a large new demand for 9 mm sidearms.

These findings were reinforced in a study conducted by LEAA and the National Bureau of Standards and released in 1975 (see the New York Times, 9 August 1975). According to the Times, the key recommendation is that "policemen should change their standard ammunition from the traditional low-velocity 159 grain [sic] .38-caliber bullet to one with more 'stopping power'." The possible implications for police weapons demand are again clear: many departments wanting to conform to the recommendation would have to purchase service handguns capable of firing the recommended hotter ammunition.

There is episodic evidence that many departments took these recommendations to heart. In 1974, the American Civil Liberties Union charged that police in Massachusetts, Connecticut, California, Hawaii, Pennsylvania, Texas, Virginia, and Washington had begun to use higher velocity hollow-nosed or dum dum bullets (New York Times, 11 November 1974: 28). Later charges add Wisconsin, Tennessee, Mississippi, and New Jersey to the list (Times, 16 January 1975: 21; 27 March 1977). To emphasize, in many cases, these changes in ammunition policy would

require the purchase of new weapons.

Very little of the evidence on the police arms policy trend lends itself to precise quantification. It seems plausible that shoulder armaments for new police, weaponry for SWAT squads, and a little experimentation with "new and improved" police rifles and shotguns would easily account for the few million shoulder weapons not yet accounted for by other sources. But how many of the remaining 5-8 million excess handguns have gone to the police? Earlier, we suggested about 1 million handguns to arm new police. The evidence reviewed above makes it clear that there would have also been at least some demand for new handguns emanating from "old" police as well. The question, then, is just how many?

Fortunately, there is one useful piece of information on total police demand for handguns in a single (presumably typical) year. The 1977 Census of Manufacturers' "Preliminary Report on Small Arms" (issued in May 1979) shows product shipments from small arms manufacturers for both 1972 and 1977. As of the preliminary report, the 1977 data are only partially compiled, but some of the 1972 data are reported with a breakdown showing "shipments to Government (Federal, state, local, etc.)" and "other shipments." Unfortunately, this breakdown is only reported for center-fire pistols and revolvers: no similar breakdown is given for rifles or shotguns, or for rim-fire pistols, and there is no similar breakdown for any of the 1977 data.

According to these data, there were 998,000 center-fire pistols and revolvers shipped in 1972, of which 251,000 were shipped to Federal, state, or local governments (1979: 3). In at least one year, then,

government demand (assumed to be predominantly or exclusively a police demand) for handguns represented approximately one-quarter of the total demand. Further, this figure understates the actual police demand, since "shipments to government" would obviously not include any weapons purchased independently by officers themselves. Government, in short, is a big handgun consumer. If the 1972 data are adequately representative, then total government consumption of handguns for the decade would be ~ 10 times 251,000 guns, or just over 2.5 million handguns, a sizable fraction of the remaining handgun excess. We conclude that the net remaining unaccounted-for excess weaponry consists of no more than ~ 5 million handguns.

CHAPTER FIVE

RECENT TRENDS IN WEAPONS OWNERSHIP

III. "FEAR AND LOATHING" AND THE MASS DEMAND FOR  
DEFENSIVE WEAPONS

The unfortunate cycle continues: the rise in street crime causes nervous people to buy guns for protection, and those very guns eventually cause more accidents, more crime, and more national paranoia. This deadly cycle must be broken. (From A Shooting Gallery Called America, issued by the Massachusetts Council on Crime and Corrections, Incorporated.)

Firearms purchases in recent years have often been motivated by fear of crime, violence, and civil disorder, as well as the fear that stricter firearms laws may make guns harder to obtain in the future. (...) Growing interest in shooting sports may explain much of the increase in long gun sales, but it does not account for the dramatic increase in handgun sales (Newton and Zimring, 1969: 21, 22).

The tremendous increase in the sale of handguns in the United States in the last decade is evidence of the defensive reaction of many Americans. For a certain segment of our population, the possession of a handgun is apparently a viable reaction to the perception of threat in the environment... (Northwood, Westgard, and Barb, 1978: 69).

The domestic arms race is a relatively recent development, probably spurred by the fact and fear of rising street crime rates and the civil disorders in the mid-1960's, and possibly by the anticipation of stricter gun laws (Speigler and Sweeney, 1975: 3).

The belief that possession of a handgun in the home or on the person offers one security and the ability to protect oneself...has apparently contributed to the rapid increase in handgun sales during the last ten years (Alviani and Drake, 1975: 6).

The revolt involves the use of guns. In East Flatbush, and Corona, and all those other places where the white working class lives, people are forming gun clubs and self-defense leagues and talking about what they will do if real race rioting breaks out (Hamill, 1970: 21).

As the preceding quotations illustrate, the notion that "fear of crime, violence, and civil disorder" underlies the recent weapons trend has become a commonplace in the literature, especially among authors favoring stricter weapons controls. Indeed, in the pro-control literature, the trend itself is often cited as a self-evident demonstration that stricter firearms controls are essential. That the number of weapons in private hands has increased is easy enough to demonstrate with nothing more than a compilation of import and production data. That the weapons increase reflects rising national fear and paranoia seems (lacking any contrary information) plausible enough on its face. The substantive conclusion is thus that the population is arming itself as a hedge against a fearful and unknown future; and since citizens preparing themselves to shoot one another to death over cultural, racial, ideological, or social disputes is something any civilized nation would try to avoid, the policy conclusion is also straightforward: "something" must be done to stem the flow of weapons into private hands, to "break the deadly cycle."

There is a parallel line of argumentation among those opposed to stricter weapons controls, one, interestingly, that shares a key premise in the pro-control argument. Many of those opposed to stricter controls, that is, would agree that "fear and loathing" are the predominant source of the recent weapons trend. Among anti-control forces, however, the fear is seen to be real and legitimate, and the purchase of a weapon is seen as a realistic and efficacious defense. People, in short, have become fearful for good reason, and have thus purchased weapons for equally good reason: it has become a dangerous world, and private weap-

only enhances one's safety within it. Here, then, the recent weapons trend is seen as a self-evident reason why stricter gun controls are not desirable: further controls on private weaponry would only deprive the citizenry of access to an important (and, they hasten to add, Constitutionally guaranteed) means of protecting self and family against rape, pillage, and plunder.

Despite what appears to be a nearly uniform consensus that rising national anxieties underlie the recent weapons trend, the analyses of the previous chapters suggest that the total contribution of "fear and loathing" to the trend may in fact be quite small. Summarizing briefly:

The gross addition to the weapons supply over the last decade apparently amounted to something in the range of 60-65 million weapons. Of these, some 20-25 million were either exported or functioned as replacements for weapons lost over the ten years from the 1968-era supply; the initial net increase is thus on the order of 40 million guns. Of these 40 million excess weapons, about 20 million are accounted for simply by growth in the number of U.S. households; and of the 20 million that then remain, something on the order of 15 million can apparently be accounted for by disproportionate increases in the popularity of hunting, collecting and the other shooting sports. Corrections for these factors thus leave an excess of no more than about 5-8 million guns, of which perhaps half can be accounted for through enhanced arms demand among the U.S. police. The number of excess weapons remaining to be explained by other factors is thus on the order of 5 million guns.

Few of the existing studies of the trend pay much serious attention to any of these alternative possible explanations. Indeed, no

compilation of weapons trend data that we have seen even goes so far as to correct the data for growth in the number of U.S. households, the minimum first step in any serious trend analysis. Rather, most of the available accounts simply assume that the weapons trend reflects an increasing "fear of crime, violence, and civil disorder," as though this were somehow a self-evident proposition.

The work by Speigler and Sweeney (1975), quoted at the opening of this chapter, provides one among many possible examples. Their data consist of a bar chart showing estimates of "guns added to the U.S. civilian market" for selected years from 1962 to 1974. As all other versions of the supply data, this chart shows an unmistakable upward trend (1975: 3). No additional evidence bearing on the sources of the trend is presented anywhere in the report. Their conclusion, that the trend results from "the fact and fear of rising street crime and the civil disorders in the mid-1960's," is an assertion for which no direct evidence is presented.

In a summary section, Speigler and Sweeney remark, "while the blessings of liberty should include shooting for hunt and sport, (...) it is doubtful whether the founding fathers could have foreseen the scope of the domestic arms race, especially in handguns, a device not well suited for either hunt or sport, but rather as a weapon, which has resulted in a gun in every other home" (1975: 1). There are two aspects of this passage that bear comment. First, there is the stipulation (as opposed to demonstration) that handguns have no (or, at best, very limited) sport or recreational applications. This is, as we see later, a key premise in the "fear and loathing" argument: if there are

no "legitimate" uses of handguns, then what except fear and loathing can possibly account for the handgun trend? But, as we emphasized earlier, no serious empirical study of sport and recreational uses of handguns has ever been undertaken; such evidence as does exist suggests a rather extensive sport and recreational use.

A second notable aspect of the passage is the suggestion that the "domestic arms race" has "resulted in a gun in every other home," as though "a gun in every other home" is somehow a new or recent development. In fact, there has been a "gun in every other home" for as long as anyone has bothered to ask the question in a national survey, as we show in the following section.

#### Survey Data on the Weapons Trend

The only direct (vs. inferential) evidence on trends in the mass demand for weaponry is contained among the several national surveys conducted since 1959 that have included a gun ownership question. Gallup first asked the question in 1959 and has included it periodically in many surveys since; the National Opinion Research Center has asked the question in several of the General Social Surveys. Trend data from these national polls and surveys for the period 1959-1977 are shown in Table 5-1.

These (and all other available) survey data on private weapons ownership show that approximately half the families in the United States possess at least one weapon, and that this proportion has been approximately constant for the last two decades. This conclusion, of course, seems immediately to contradict the data on weapons supply, which show

TABLE 5-1  
SURVEY DATA ON TRENDS IN MASS WEAPONS OWNERSHIP,  
1959-1977

	<u>1959</u>	<u>1965</u>	<u>1966</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1976</u>	<u>1977</u>
<u>% Owning:</u> <sup>a</sup>								
No Guns	50.8	52.0	52.6	55.5	51.4	52.9	52.0	48.9
Shotgun	32.2	32.8	32.1	26.0	27.5	27.8	27.9	31.0
Rifle	27.4	24.3	27.7	24.6	29.1	26.7	28.0	30.1
Handgun	12.6	14.5	15.1	15.4	19.8	19.7	21.4	20.5
(N)	1538	3492	3541	1541	1504	1484	1499	1530

<sup>a</sup>Columns do not sum to 100% because families may own more than one type of weapon.

SOURCE: Gallup Polls #616, 704, 733, and 852 (1959-1972); NORC General Social Surveys (1973-1977).

very substantial increases in weaponry especially in the last ten years. In the literature, typically, this disparity is resolved by the simple assertion that the survey data are invalid, that many people in fact own weapons but deny it to survey interviewers. There are, however, other equally plausible explanations.

The total number of weapons in private hands is a function of three variable parameters: the total number of families, the proportion of those families who own at least one gun, and the average number of guns owned by families owning at least one of them. The survey data shown in Table 5-1, of course, speak only to the second of these parameters. A constant proportion owning a weapon is thus not inconsistent with the large supply increases if there have been proportionate increases in either or both of the remaining two parameters.

The effects of growth in the number of U.S. households were calculated in Chapter Three; about half the net supply growth can be attributed to this source alone. If one therefore grants, not unreasonably, that all existing evidence is equally valid -- that the supply data are real and the survey data equally real -- then it follows deductively that the rest of the "disparity" between supply-side and demand-side trend estimates must be accounted for by an increase in the average number of weapons owned by families owning at least one of them.

Indeed, given the conclusions of the previous chapters, the necessary increase in this parameter can be readily calculated. In 1968, we estimate, there were 80 million guns and some 60 million U.S. households, half of whom owned a gun. The average number owned among the half owning at least one gun must therefore have been approximately  $80/30 =$

2.67 guns per gun-owning family, on average. Calculations for 1978 suggest some 120 million guns dispersed over half of 75 million households, for an average of about  $120/37.5 = 3.20$  weapons per gun owning family. In other words, an increase of just one-half gun over the decade in the average number owned by families owning at least one would wipe out all the apparent "disparity" between the supply-side and demand-side trend estimates.

Unfortunately, the projected increase in this parameter cannot be independently tested: while many surveys ask the simple ownership question, very few of them follow up with a question on how many guns the respondent owns; and the best existing survey data on "how many guns" have already been used in calculating the total number of guns in private hands (see Chapter Two). The case that this average has increased is therefore mainly logical, not empirical.

The logical case, however, is reasonably strong: if this average has not increased, and the supply increase is in fact genuine, then the only remaining possibility is that the true proportion of U.S. families owning a gun has increased. And since the existing surveys show no such increase, this is the same as arguing that the survey data are invalid. But if they are invalid, then why or how do they give estimates of total weaponry that are generally quite consistent with the supply-side estimates?

This interpretation is bolstered by the data in Table 5-1 on gun ownership by weapons type. Although the proportion owning at least one firearm of any type has been roughly constant throughout the time series, the proportion saying they own a handgun nearly doubles, from

13% owning a handgun in 1959 up to 21% owning a handgun in 1977. In contrast, the proportions claiming to own rifles and shotguns have been roughly constant, as has the proportion owning no weapons at all. These data therefore confirm that the tendency to own more than one type of firearm, given that one possesses at least one of any type, has increased over the past twenty years, and this pattern can only result from additional weapons purchases by families already owning at least one weapon.

The implication, of course, is that most of the remaining "excess" firearms in the supply trend may well be accounted for by additional purchases of guns among families already owning one or more weapons; the data on weapons type suggest that this may be especially true of the remaining "excess" handguns. If this speculation is substantially correct, then the remaining weapons trend takes on an entirely different cast. We would not be dealing, that is, with first-time purchases by "nervous" and "paranoid" citizens who had never before been exposed to or familiar with small arms, but rather with second, third, or fourth time purchases among families who have always owned guns and who are (one assumes) comfortable with them and familiar with their use. It seems reasonably obvious that from the viewpoint of "public safety," the transition from no-guns to one-gun is considerably more "alarming" than the transition from several to several + 1 weapons.

But why, it may be asked, would a family that already owns one or more guns want to purchase additional ones? Surely, one or two guns is "enough." This line of argumentation, however, assumes that weaponry is somehow a thing apart, qualitatively different than any other kind

of consumer purchase. We suggest, in contrast, that the purchase of additional weaponry by families who routinely own guns is not very different than the purchase of additional stereo equipment by stereo buffs or of new ski equipment by ski buffs, etc., or in other words, that people own guns mainly because they enjoy them and the activities they make possible. Weapons-owning families presumably purchase additional guns for the same reason that TV-owning families often purchase additional TVs, namely, because these are just the kinds of things they like to buy when their incomes rise.

The most "alarming" aspect of the data shown in Table 5-1 is the distinctive upturn in handgun ownership over the two decades; a crude analysis of this handgun trend is shown in Table 5-2, which reports the percentages of various population subgroups saying they possess at least one handgun, for the years 1959 and 1976. This analysis shows nothing very sharp or distinctive. In particular, these data do not suggest that some population subgroups are arming themselves at a greatly disproportionate rate, in contrast to what one might expect from the "fear and loathing" hypothesis. The increasing proportion owning a handgun has been concentrated in (but certainly not restricted to) the South, a region where weapons ownership rates have always been relatively high. (see Chapter Six, below). All told, Southern handgun ownership increased by just over 13 percentage points during the period, vs. a 6.4 point increase outside the South. That the trend has been disproportionate in a region which is traditionally high in private weapons ownership adds additional support to the interpretation that much of the recent trend reflects additional weapons purchases among families already possessing weapons.

TABLE 5-2  
PER CENT OWNING A HANDGUN BY SOCIAL BACKGROUND  
CHARACTERISTICS: 1959-1976

	Per Cent Owning Handgun		
	1959 <sup>a</sup>	1976 <sup>b</sup>	Change
Total U.S. Population N =	12.6 (1538)	21.4 (1499)	8.8
<u>By Political Party</u>			
Democrat	13.7	21.9	8.2
Independent	10.7	21.6	10.9
Republican	12.5	20.7	8.2
<u>By Religion</u>			
Protestant	14.0	25.8	11.8
Catholic	10.9	13.3	2.4
Jew	1.9	14.8	12.9
<u>By Heads Occupation</u>			
White Collar	13.6	21.9	8.3
Blue Collar	12.8	24.7	11.9
Farm	12.3	19.5	7.2
<u>By Education</u>			
Less than High School	10.1	21.3	11.2
High School Graduate	16.1	20.0	3.9
Some College	19.9	25.8	5.9
College Graduate	8.3	20.5	12.2
<u>By Age</u>			
18-30	11.5	19.1	7.6
31-54	13.7	23.2	9.5
55+	11.6	21.3	9.7
<u>By Sex</u>			
Men	14.6	25.6	11.0
Women	10.7	18.1	7.4
<u>By Race</u>			
White	12.9	21.5	8.6
Nonwhite	10.2	20.3	10.1

TABLE 5-2 (continued)

	Per Cent Owning Handgun		
	1959 <sup>a</sup>	1976 <sup>b</sup>	Change
<u>By City Size</u>			
Open Country, Farm	16.3	25.8	9.5
City less than 10,000	13.5	23.8	10.3
10,000-50,000	15.1	30.0	14.9
50,000-250,000	8.1	23.0	14.9
250,000 and up	9.7	15.8	6.1
<u>By Region</u>			
South	16.9	30.1	13.2
Non-South	10.9	17.3	6.4

<sup>a</sup>SOURCE: AIPO (Gallup) #616.

<sup>b</sup>SOURCE: 1976 NORC GSS.

Also, the handgun trend has been slightly disproportionate in middle-sized cities, which show increases on the order of 15 percentage points during the period. Interestingly, the increase in the larger urban areas (those over 250,000 population) amounted to only about 6 percentage points, somewhat below the total increase for the population as a whole, and this too is the opposite of what "fear and loathing" would lead one to expect.

There are two final items of interest in the table. First, the increase in handgun ownership has been concentrated at the extremes of the education distribution: ownership among both high school dropouts and college graduates increased more sharply (by 11 to 12 percentage points) than in the population as a whole. And secondly, the ownership increase was also disproportionate among Protestants and Jews; Catholics show virtually no increase in handgun ownership at all during the period. The Jewish increase was particularly pronounced: in 1959, 2% or less of the Jewish population admitted to owning a handgun; in 1976, the figure was nearly 15%.

The rest of the variables in the table show little or nothing of interest. The handgun trend has been approximately the same among both blacks and whites, among both men and women, and across all age, occupation, and political party categories. Even the differences by region, city size, and religion are modest. The most prudent conclusion from these data is therefore that the increase in handgun ownership has cut more or less equally throughout all socio-demographic sectors of contemporary American society.

A somewhat more complicated version of these data is shown in Table 5-3. This table is identical to Table 5-2 except that a control

TABLE 5-3  
TRENDS IN HANDGUN OWNERSHIP BY CITY SIZE AND  
SELECTED BACKGROUND VARIABLES

	% Owning Handgun								
	<10,000			10-250,000			250,000+		
	1959	1976	Δ	1959	1976	Δ	1959	1976	Δ
<u>Religion</u>									
Protestant	15.7	26.1	10.4	12.7	30.3	17.6	11.7	19.6	7.9
Catholic	15.6	22.2	6.6	9.4	12.3	2.9	8.5	11.0	2.5
Jew	-- <sup>a</sup>	--	--	--	20.0	--	2.1	12.5	10.4
<u>Head's Occupation</u>									
White Collar	25.0	24.7	-0.3	11.9	28.6	16.7	6.6	13.4	6.8
Blue Collar	16.5	26.1	9.6	12.7	25.8	13.1	9.4	21.9	12.5
Farm	12.4	24.1	11.7	--	--	--	--	--	--
<u>Education</u>									
Less than High School	12.6	25.5	12.9	6.9	24.2	17.3	8.3	12.7	4.4
High School Graduate	23.1	22.3	-0.8	15.5	23.2	7.7	10.8	14.5	3.7
Some College	19.0	31.1	12.1	30.8	27.0	-3.8	15.4	22.2	6.8
College Graduate	10.3	25.7	15.4	12.0	23.2	11.2	5.3	15.7	10.4
<u>Age</u>									
18-30	12.9	23.8	10.9	10.9	20.6	9.7	10.0	15.0	5.0
31-54	18.0	25.9	7.9	13.4	27.1	13.7	9.1	16.8	7.7
55+	13.3	25.0	11.7	8.5	23.0	14.5	11.5	15.2	3.7
<u>Sex</u>									
Male	18.8	3.14	12.6	13.0	25.6	12.6	10.4	20.9	10.5
Female	12.5	19.6	7.1	10.1	22.7	12.6	9.0	11.6	2.6
<u>Race</u>									
White	15.8	25.2	9.4	12.4	23.8	11.4	9.5	15.6	6.1
Nonwhite	13.5	17.6	4.1	0.0	26.3	26.3	11.5	17.6	6.1
<u>Region</u>									
South	19.2	28.4	9.2	17.4	34.5	17.1	12.9	24.5	11.6
Non-South	11.6	22.5	10.9	7.8	18.1	10.3	7.7	13.6	5.9

<sup>a</sup> N < 10.

for city size has been introduced. In order to achieve respectable cell sizes throughout the table, city size has been collapsed to three categories: "rural," which here means anything under 10,000 population; "middle-sized," everything between 10,000 and 250,000; and "urban," everything from a quarter million up. The table then reports, within each of these three city sizes, the proportions of various population subgroups saying they own a handgun, for both 1959 and 1976. The rows denoted by "Δ" report the simple increase (or decrease) in each proportion over the period. Thus, the first third of the first line of the table shows that in 1959, 15.7% of all rural Protestants owned a handgun (column one), that in 1976, ownership among rural Protestants had increased to 26.1% (column 2), for an increase of 10.4 percentage points (column 3).

In the total sample, the increase in handgun ownership over the period amounted to just about 9 percentage points, and so any increase exceeding 9 points is "disproportionate." Given the usual margin of survey error, however, and the fact that many of the comparisons reported in the table are sustained by distressingly small cell sizes, it makes sense to insist on something more than 9 points as the minimum difference worth discussing. For present purposes, a 15 point increase seems like a reasonable, if necessarily arbitrary, criterion. Where, then, did handgun ownership increase by more than 15 percentage points in the 1959-1976 period?

With one exception, all the fifteen-point-or-greater increases are registered among respondents from middle-sized cities. The sole exception is that college-graduated respondents from rural areas showed a

15.4 point increase in the period. In the middle-sized cities, subgroups showing trends in excess of the criterion include Protestants, white collar workers, high school dropouts, non-whites, and Southerners. Geographically, then, the largest increase in handgun ownership has come in middle-sized Southern cities; by way of contrast, the handgun trend among large non-Southern cities (amounting overall to 5.9 percentage points) is among the more modest shown anywhere in the table.

Strictly, these data rule out very little of the speculation on motivations underlying the recent weaponry trends; the data tell us something about the "who" of the issue, but little or nothing of the "why." However, these data do pose some puzzles that any adequate theory about the causes of the trend, including "fear and loathing," must address: Why, for example, is the trend sharper in the South than outside of it? Why has it been concentrated in middle-sized cities? Or among Protestants and Jews but not Catholics? Why do non-whites in middle-sized cities show such a sharp increase in handgun ownership, when both rural and urban non-whites show no equivalent trend? And so on.

Many of the variables shown in Table 5-3 are intercorrelated, and so it is difficult to determine just which of these effects are robust and independent of the others, and which are not. In order to separate the genuine from the spurious, we have also regressed handgun ownership (coded as a dummy variable where 1 = owns a handgun and 0 = does not) on selected background variables. The results of this regression analysis are shown in Table 5-4. The data base for the regression is a merge of both the 1959 Gallup survey and the 1976 NORC survey; accordingly, year

TABLE 5-4  
MULTIPLE REGRESSION OF HANDGUN OWNERSHIP ON  
YEAR, SELECTED BACKGROUND VARIABLES,  
ON YEAR-BY-BACKGROUND INTERACTIONS

	<u>b<sup>a</sup></u>	<u>s.e.<sup>b</sup></u>	<u>Significance<sup>c</sup></u>
<u>Main Effects</u>			
Year (1976 = 1)	.112	.068	.098
Catholic (=1) <sup>d</sup>	-.012	.023	NS <sup>f</sup>
Jew (=1)	-.082	.056	NS
Other (=1)	-.064	.051	NS
West (=1) <sup>e</sup>	.068	.030	.024
East (=1)	-.010	.025	NS
South (=1)	.066	.027	.013
Age (in years)	.000	.000	NS
Sex (Male = 1)	.040	.019	.032
Race (White = 1)	.029	.032	NS
Urban (=1)	-.053	.024	.025
Middle (=1)	-.038	.025	NS
Education	.017	.007	.014
Blue Collar (=1)	.010	.010	NS
<u>Interactions with Year</u>			
Catholic	-.069	.033	.037
Jew	.047	.093	NS
Other	-.044	.063	NS
West	.010	.042	NS
East	-.031	.037	NS
South	.042	.037	NS
Sex	.037	.027	NS
Race	-.004	.047	NS
Urban	-.004	.035	NS
Middle	.049	.035	NS
Education	-.008	.009	NS
Blue Collar	-.011	.014	NS
$R^2 = .059$ $F = 7.172$ $p = .000$ $\chi^2 = .011$			

TABLE 5-4 (continued)

<sup>a</sup>Unstandardized multiple regression coefficient.

<sup>b</sup>Standard error of the estimate of the b coefficient.

<sup>c</sup>T-test against the null that the true coefficient equals zero.

<sup>d</sup>For the religion dummies, "Protestant" is the omitted category.

<sup>e</sup>For the region dummies, "Midwest" is the omitted category.

<sup>f</sup>NS:  $p > .10$ .

<sup>g</sup>The regression intercept.

varies across the respondents and is therefore entered in the regressor set. The remaining independent variables are just those shown in previous tables, treated as dummy variables where appropriate. Finally, to assess the effects of the background characteristics on the trends, each of the independent variables has also been entered as an interaction term with year.

Results of the regression analysis suggest the following conclusions. First,  $R^2$  for the total regression is less than 6%. And while this is "significantly" more than zero variance explained, it is not much more. This means that handgun ownership is largely (but not exclusively) random with respect to the variables considered in this analysis, or in other words, that handgun owners are not very much different than non-owners in terms of these social characteristics.

Secondly, the main effect for year is .112. This suggests that net of all variables considered in the table, the increase in handgun ownership over the period would have been some 11.2 percentage points, rather than the 8.8 percentage point increase that was actually observed. That the coefficient for year is larger than the zero-order effect and statistically significant (at the .10 level) implies that the handgun trend is also not adequately explained by the independent variables included in the regression. For example, if it were the case that the trend only reflected increases in the relative size of population subgroups that always owned handguns at a relatively high rate (if, that is, the trend were a simple artifact of demographic changes), then the coefficient for year would be zero and insignificant. That more of the trend is left after all these variables have been taken into account than there was

to begin with is thus evidence that the trend has been largely independent of the variables in this analysis.

The main effects reported in the table are all much as one would expect given the zero-order results. Net of all other variables and of year, pistol ownership is significantly higher in the South (.066) and West (.068) than in the omitted region, the Midwest. Men are slightly more likely to report a family handgun than are women; handguns are less common in urban areas than elsewhere; the tendency to own a handgun increases with respondent's education.

Of the 12 interactions of these variables with year, only one is significant, the interaction between year and the Catholic dummy. Net of all other variables shown in the table, that is, Catholics showed a smaller increase in handgun ownership in the period than would otherwise have been expected (-.067). That none of the other interactions achieves significance again indicates that the trends are not adequately explained by the variables contained in this model.

In general, it appears that little of substance can be concluded on the basis of these survey data on the handgun trend; most of the legitimate conclusions are negative. That is, the trend revealed in these data turns out to be largely independent of the various socio-demographic factors available for the analysis. It can at least be noted, however, that many patterns that would be consistent with "fear and loathing" as an explanation are not observed in these data: the trend, for example, is not distinctively sharper in larger urban areas than in smaller places, and is not clearly concentrated in any one particular social, racial, or ideological group. The major positive conclusion is thus

that the increase in the proportion of the population owning a handgun has been more or less uniform across all major sectors of the society.

#### Empirical Studies of "Fear and Loathing"

Once the obviously polemical and the essentially polemical "studies" are discounted, the amount of empirically credible research on "fear and loathing" that remains is unimpressive in quantity and inconclusive in substance. Indeed, there are no more than a handful of legitimate studies of the topic, and the few studies that have been conducted generally do not show very substantial fear and loathing effects.

Newton and Zimring (1969) remain by far the most widely cited source among authors arguing the fear and loathing theme. Their evidence on the supply trends was reviewed in an earlier chapter. Unlike most other accounts, there is here at least some effort to compile data on sport and recreational weapons uses, and there is an explicit acknowledgement that "to some extent these dramatic increases in gun sales merely reflect increased shooting sports activity" (1969: 20). "Yet," they continue, "increases in hunting and sport shooting only partly account for the spiraling sale of firearms and can have little to do with handguns. Firearms purchases in recent years have often been motivated by fear of crime, violence, and civil disorder, as well as the fear that stricter firearms laws may make guns harder to obtain in the future" (1969: 21).

Some of the sport and recreation data compiled by Newton and Zimring suggest, as our analysis in Chapter Three suggests, that the portion of the trend attributable to this source may be very large

indeed; here we note their very intriguing finding that the percentage increase in expenditures for sporting arms and ammunition for the early 1960's was nearly identical to the increased expenditures on fishing equipment. They also remark that, even though the number of licensed hunters was fairly constant through the period, "hunters now have longer seasons, more shooting reserves, and more leisure time and income to spend on sports and hobbies." But ascribing any large portion of the total weapons increase to sport and recreational demand would sit poorly with the overall themes of the rest of the report. They thus conclude their discussion of the trend on the following note: "Growing interest in shooting sports may explain much of the increase in long gun sales, but it does not account for the dramatic increase in handgun sales. Fear of crime, violence, and civil disorder, and perhaps the anticipation of stricter firearms laws, appear also to have stimulated sales of handguns in recent years" (1969: 22).

This, it will be noted, is a pretty firm conclusion, and so one expects to find, somewhere in the report, persuasive evidence that "fear of crime..." has motivated a large fraction of recent weapons purchases. Evidence along these lines is not amply abundant in the report. The conclusion, rather, is sustained by two fragments of evidence, neither persuasive, and by one critical stipulation that happens also to be incorrect. First the evidence:

(i) Newton and Zimring emphasize that "self-defense is the most frequently given reason for owning a handgun" (1969: 21). In support, they cite a finding from a 1966 NORC survey that asked, "Is there a gun, pistol, rifle, or shotgun in the house that is used for the pro-

tection of the household, even though it is also used for sport or something else?" Overall, 37% of the respondents (and therefore, about three-quarters of the weapons-owning respondents) said "yes." They also report that some 95% of the "shooters" in a 1964 poll mentioned hunting as a "good reason" for owning a shoulder weapon, but only 16% gave this as a good reason for owning a handgun; in contrast, "self-defense" was mentioned as a good reason for owning a handgun by 71%.

Since, in our view, people should be seen as expert informants on the conditions of their own existence, these findings constitute strong evidence that must be taken seriously. The question is, Evidence for what? The data do show, unmistakably, that perhaps two-thirds to three-fourths of the people who own guns own them at least in part for self-defense. Given the question wording, it is obviously impossible to ascertain how many own them primarily or exclusively for self-defense, and so this question fails to bear on any possible sporting uses of these same weapons. That guns are owned in part for self-defense clearly does not rule out other ownership reasons, since virtually all hunting or sporting weapons could also be used, should the situation arise, for self-defense.

Also, the question does not ask about protection against what. The presumption is that most or all of these "defensive" weapons are to protect against other human beings, but in at least some cases, the "self-defense" in question would be protection against "snakes, angry wolverines, and rabid foxes," to borrow a phrase from an author quoted in an earlier context. The "fear" of aggressive fauna would hardly constitute evidence in favor of Newton and Zimring's hypothesis.

Some indirect evidence on the ownership of weapons for defense against animals is contained in the 1978 DMI poll noted in several previous contexts. One question in the poll asked whether people had "ever used a gun, even if it wasn't fired, for self-protection." Altogether, 12% of the sample responded "yes." A followup asked, "Was this to protect against an animal or a person?" Half the responses to this question referred to protection against animals (DMI, 1978: 116). How weapons get used is only an imperfect indicator of why they are owned in the first place, and so this is, as we say, only indirect evidence. But it suggests that perhaps half of all "defensive" weapons are for defense against animals as opposed to other human beings.

Other aspects of Newton and Zimring's treatment of these data bear some comment. Their conclusion is that "self-defense is the most frequently given reason for owning a handgun." The NORC question, however, does not differentiate between handguns and long guns (in fact, it conscientiously collapses any such distinction) and so does not bear directly on this conclusion. Thus, the only evidence cited in the report bearing directly on this conclusion is the finding from the 1964 poll of "shooters." That poll, however, did not ask people why they owned a gun; it asked "shooters" to give opinions on what good reasons for owning various kinds of guns would be -- a separate matter entirely. The 1966 NORC result is also cited as evidence that "many Americans keep loaded firearms in homes, businesses, and on their persons for the purpose of protection" (1969: 61). This is an unwarranted read-in to the evidence: the finding itself indicates nothing about the proportion of families who keep loaded guns in their house, only about the proportion who own guns (loaded or not), at least in part, for protective purposes.

The preceding aside, the most serious problem with the "reasons for ownership" data in the context is that they do not, in and of themselves, relate directly to the question at issue, namely, the sources of the handgun trends. To explain the handgun trend on the basis of these kinds of data, one would have to show either that (a) the number of gun owners citing "defense" or "protection" as a reason for ownership had increased over the same time span, or (b) the numbers of people feeling some need for "protection" or "defense" had increased over the time span. Either of these may, of course, be true; given the events of the 1960's, the second (if not the first) may be self-evident. But there is again no evidence cited or presented anywhere in the Newton-Zimring report bearing on either (a) or (b).

The most current and probably best evidence on why people own guns is contained in the 1978 DMI poll (see Table 5-5). The DMI question is less ambiguous than the NORC question because it asks specifically for the "most important reason" for weapons ownership. Focussing for the moment on the "all guns" column, "self-defense at home" is mentioned as the primary reason by just one in five weapons owners; the large majority (71%) mention some sport or recreational use (hunting, target shooting, or collecting). From this, it can be correctly inferred that "self-defense at home" is not the "most frequently given reason" for owning a weapon. But we could certainly not conclude from this that "fear and loathing" is not the explanation of the weapons trend. The Newton-Zimring inference from their 1966 survey data is therefore a non sequitur.

TABLE 5-5  
REASON FOR GUNS OWNERSHIP<sup>a</sup>

	<u>All Guns</u>	<u>Handguns Only</u>
Self-Defense at Home	20	40
Protection at Work	1	5
Law Enforcement or Security Job	3	8
Part of a Gun Collection	7	14
Target Shooting	10	17
Hunting	54	9
Just Like to Have One	3	6
Missing Data (DK, NA, etc.)	2	1
	<hr/> 100%	<hr/> 100%

<sup>a</sup>The question reads: "I have a list of reasons why people own guns. Please listen while I read it and then tell me the most important reason you have a gun.

SOURCE: DMI, 1979: 40; all results are from DMI's December, 1978, poll.

Other aspects of the DMI data also warrant some emphasis here. First, consistent with the conclusion from Newton and Zimring, "self-defense at home" is the modal reason for owning a handgun. At the same time, the proportion of handgun owners mentioning this was 40%, which means that the clear majority gave some other reason. This finding therefore supports the conclusion that most handguns are owned for some reason other than self-defense, contrary to Newton and Zimring's depiction.

Secondly, 5% of the handgun owners mention "protection at work" and 8% mention "law enforcement or security job" as the primary reasons for owning the handgun. "Protection at work" is somewhat ambiguous in context; presumably, this refers to persons such as truckers, taxi cab drivers, possibly foresters or farmers, or other "non-security" occupations where carrying a gun provides a useful hedge against the unknown. "Law enforcement or security job," however, is more clearcut; this refers to the same subject matter discussed in the previous chapter. Now, the weapons demand projected from that chapter was based on a total number of "armed public servants" somewhere in the range of 750,000 plus some additional (and hard to estimate) number of "armed private servants" (that is, private police and security forces). If the recurring guess (from the literature on private security), that there are as many private as public police, is correct, then we would project a total "security" employment somewhere in the range of 1.5 million persons. Now, according to the DMI data, 23% of the nation's households possess a handgun, and of these, 8% say the main reason is a law enforcement or security job. Based on a total of 75,000,000 households, the DMI data thus give (75

million) (.23) (.08) = 1,380,000 as the total armed security employment, encouragingly close to the corresponding Chapter Four estimates.

Third, 14% of the handgun owners mention "gun collection," 17% mention target shooting, and 9% mention "hunting" as the primary reason for owning a handgun. The sport and recreation mentions therefore amount to 40% of the total, the same proportion who gave "self-defense in the home" as the primary reason. This finding therefore suggests that sport and recreation have at least as much to do with handguns as self-defense has. Working again from a base of 75 million households, the proportions shown in Table 5-5 project out to totals of 2.9 million handgun target shooters in the nation as a whole, 2.4 million handgun collectors, and 1.6 million persons who hunt with handguns (here assuming one and only one shooter per gun owning household). The conclusion from Newton and Zimring, "that hunting and sport shooting...can have little to do with handguns," is, in our view, sharply undercut by these results.

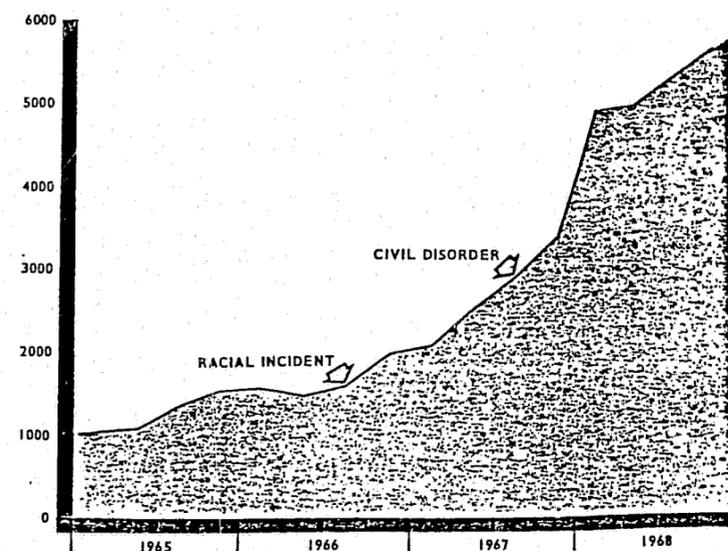
Finally, 20% of all gun owners (handgun or otherwise) mention "self-defense in the home" as the primary ownership reason, which implies that roughly four out of five privately owned weapons are possessed for reasons other than "fear and loathing." Since gun owners represent about half the total population of households, the proportion of all American households possessing a firearm of any sort primarily for self-defense is therefore on the order of 10%. (Contrast this, for example, with the imagery of "a gun in every other home," as advanced in Speigler and Sweeney, above.) If this 20% proportion has been constant over the past two decades, then one could suggest, reasonably, that some 20% of

the excess weapons supply (as estimated earlier) has been absorbed in "fear and loathing" demand. Given an initial weapons excess of 40,000,000 guns, this further suggests a total demand for "defensive" weapons of (.2) (40 million) = 8 million firearms, which agrees quite respectably with the 5 million net excess guns projected at the close of the previous chapter.

(ii) Aside from the evidence on reasons for gun ownership, the only other evidence presented in the Newton-Zimring report bearing on "fear of crime..." and its effects on weapons demand is a chart showing trend data on permits to purchase firearms in Detroit for the years 1965-1968 (see Table 5-6). These data are apparently presented to show that applications for permits to purchase weapons respond to racial incidents and civil disorders. Even if the data showed this clearly and unambiguously, there would be a question whether results from "Murder City" generalize to the nation as a whole. But the graph does not clearly show the presumed "fear and loathing" effect even for Detroit. The data do reveal an unmistakable upward trend in applications to purchase a weapon (NOTE: not in their actual purchase), but it does not reveal any clear "spike" or "break" in the time series corresponding, even with appropriate lags, to the points designating "racial incident" and "civil disorder." (It should also be kept in mind that the total population of metropolitan Detroit during this period was about 4.4 million, whereas the quarterly permits to purchase number in the range of one to six thousand.)

The data in Table 5-6 show that the number of persons in Detroit wishing to purchase a legal firearm increased quite regularly from 1965 to 1968, but say little or nothing about why. "Fear and loathing" is

TABLE 5-6  
"NEW PERMITS TO PURCHASE FIREARMS IN DETROIT,  
MICHIGAN (BY QUARTER), 1965-1968."



Source: Stanford Research Institute.

SOURCE: Reproduced exactly as it appears in Newton and Zimring, 1969: 22.

one possible explanation that is neither confirmed nor ruled out by these data. This notwithstanding, the Newton-Zimring Detroit chart is commonly cited in the pro-control literature as nearly definitive proof on the "fear and loathing" point (e.g., Comptroller General of the United States, 1978: 21).

(iii) The most compelling argument for "fear and loathing" is thus the simple stipulation that sport or recreation "can have little to do with handguns" (1969:21), as in the Speigler-Sweeney passage already discussed. A sport or recreational explanation of the handgun trend is therefore ruled out on a priori grounds. This purely logical argument, however, is directly contradicted by the DMI findings and by other information presented in Chapter Three. To be sure, these DMI and other data do not demonstrate that sport and recreation actually account for the handgun trend, only that they may. This explanation, that is, cannot be ruled out solely on a priori grounds.

Thus, the source most commonly cited in the literature as demonstrating a "fear and loathing" effect turns out to contain virtually no evidence at all pointing to such a conclusion. At best, the evidence is ambiguous and the stated conclusions premature. Much the same is true for most other direct inquiries into fear and loathing as a factor in the trend. For example, Wright and Marston (1975) looked at 1973 survey evidence on correlates of weapons ownership in cities and suburbs (size 250,000 and up). The "fear and loathing" interpretation requires at least that direct measures of "fear and loathing" correlate with gun ownership, but they found very little to suggest such a pattern. Indeed, persons who expressed some fears about venturing out alone at

night were somewhat less likely to own a gun than those who did not. Weapons ownership was also disproportionately low among persons who had been burglarized or threatened with force in the previous year, and among those living in integrated neighborhoods. All these findings are directly opposite to what "fear and loathing" would lead one to expect (Wright and Marston, 1975: 101-103).

Several other survey studies have reported similar patterns. For example, Williams and McGrath conclude from another analysis of the 1973 NORC data that "there is not a statistically significant degree of association between victim status and gun ownership" (1976: 27). And here too, it is reported that there is a "negative relationship between fear in the neighborhood and gun ownership" (1976: 27-28). In contrast, Caetano (1979) reports, on the basis of a broader measure of victimization (victimized in five years rather than one, also family and close acquaintance victimization, as well as personal victimization) but with a substantially less compelling sample (467 night students at California State College, San Bernadino), that there is a .24 correlation (gamma) between criminal victimization and gun ownership. This correlation, however, was somewhat less than half the correlation between parental and respondent gun ownership (gamma = .55). (There is considerable evidence from many sources that adult weapons ownership is a function of early socialization; see the following chapter.) Further, among several categories of respondents (women, the young, nonwhites, and the lower classes), the relationship with gun ownership was either insignificant or reversed.

Northwood, Westgard, and Barb (1978) have analyzed applications for permits to carry a concealed weapon in Seattle. Across the sample of applications analyzed, "only 18.5% ... claim prior victimization as a reason for carrying a concealed weapon" (1978: 71), which suggests that "this factor alone is not sufficient to explain gun application behavior in general." A further analysis looked at the relationship between per capita applications and the crime rate across Seattle census tracts. "The results suggest a low and statistically insignificant relationship to gun application rates. Thus, the notion that a 'crime threat' is a major determiner for people to arm themselves is not convincing" (1978: 71)

There was, however, a notable correlation across census tracts between applications and the proportion nonwhite, and the rate of increase in the proportion nonwhite. Thus, applications were lowest in racially stable areas, and highest in racially unstable areas. It appears, however, that the "distinctiveness" of racially unstable areas in gun applications is due mainly to a higher rate of applications among blacks, not among whites (1978: 72-73). (Still, the rate of white applications was higher "in areas experiencing the greatest increase in black occupancy" (p. 73).) Thus, there is at least some evidence from this study to suggest that racial instability, if not crime itself, may contribute to weapons behavior.

Bordua and Lizotte (1979) have analyzed the incidence of Firearms Owners Identification Cards across Illinois counties. (These cards are required for all legally possessed weapons in the state.) No measure of the county crime rate was significantly related to FOIC cards for either males or minors. Legal ownership among women was, however, significantly

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related to the cube of the county's violent crime rate and to the proportion of young blacks in the county. This analysis thus suggests that adult women, but not minors or adult men, tend to buy guns at least in part as a response to crime.

Individual-level survey data for Illinois have also been analyzed by Lizotte and Bordua (1980). Their data allow them to differentiate directly between weapons owned for sport and weapons owned for purposes of self-defense; the former outnumber the latter by some three to one. No measure of crime, victimization, perceived crime, proximity to blacks, fear, or racism correlates with ownership for sport, which is to say that the ownership of most weapons (the three-quarters majority) is independent of "fear and loathing."

Concerning protection guns, "violent crime in the county is the only significant predictor" (1980: 239). Apparently, "people's defensive ownership of guns is totally a function of violent crime in the area. It is not an extension of a general home defense orientation or a product of any of the other variables in the model, such as violent attitudes or racism" (1980: 239). Defensive ownership was also uncorrelated with proximity to blacks, direct criminal victimization, fear of crime, and the perceived crime rate. Thus, even here, the bulk of the evidence is inconsistent with the "fear and loathing" theme.

The most sophisticated effort to examine "fear and loathing" as a factor in the handgun trend is due to Clotfelter (1977). Data are derived from six states with good time-series data on handgun sales; independent variables include violent crime rates (taken from UCR) and indices of civil disorder events for both the states and for the nation as a whole. The findings provided only limited support for "fear and

loathing." Civil disorder incidents for the country as a whole "represent an important determinant of handgun demand," but "disorders within a state have no independent effect" (1977: 13, our emphasis). There was also no significant effect for violent crime rates: "The strong upward trend in [handgun] sales cannot be explained by...rising violent crime rates" (1977: 13). The time-series data (1977: Figure 1) show an unmistakable spike centered on 1967-1968, with a general upward linear trend on either side of the spike. One interpretation is thus that there was a one-time surge on handgun demand around the time of the major civil disorders of the late 1960's, consistent with "fear and loathing." But this finding obviously does not explain the persistence of the trend into the 1970's. As Clotfelter notes, "much of the demand for handguns remains unexplained, however, as illustrated by the strong upward trends in purchases over the last decade."

These are not the only studies that have looked at "fear and loathing," but they adequately illustrate the general point, namely, that there is no credible study anywhere in the literature that shows, clearly and unmistakably, a "fear and loathing" effect in the weapons trend. This, of course, is not to say that there is no such effect, only that no one has yet been able to find it.

Why not? The most parsimonious explanation, of course, is either that the effect does not exist or that the effect is so subtle as to escape detection by existing methods of research. In either case, it seems obvious that the overall contribution of "fear and loathing" to the recent "domestic arms buildup" is very much smaller than commonly suggested in the standard accounts. As Chapters Three and Four have

argued, by far the largest share of the "excess" weaponry of the last decade must be ascribed to other sources, most relatively benign from the societal viewpoint.

CHAPTER SIX  
CHARACTERISTICS OF PRIVATE WEAPONS OWNERS

The present chapter reviews the available research on characteristics of the persons and households that possess weaponry, that is, how owners and nonowners differ in social background, locale, and personal outlooks. Our purpose is essentially to determine where in the society the private ownership of weapons is concentrated.

There are at least two important distinctions that need to be introduced. First is the distinction between personal and household weapons ownership. It seems reasonable to assume that guns are owned by individuals, and it is the characteristics of these individuals that are at issue here. However, much of the available survey data on weapons ownership is based on a question asking about guns kept in the house, whether they belong to the respondent or to some other family member. In turn, much of the descriptive literature on ownership correlates deals not with individual owners but with the characteristics of the households within which weapons owners reside, a separate matter.

Secondly, it is essential to distinguish among various types of private weaponry. Several distinctions might be considered in this context, for example, handguns vs. shoulder weapons (which has been the focus of some analyses, reviewed below). Lizotte and Bordua (1980, forthcoming; Bordua and Lizotte, 1979), however, have made a persuasive case that the most critical distinction concerns the reasons why the weapon is owned, for protection and self-defense, or for illicit criminal purposes. Their research (reviewed in more detail below) strongly suggests that the characteristics of persons owning weapons for sport

and recreational purposes are sharply different than the characteristics of persons owning protective or defensive weaponry. (It can also be assumed that the criminal ownership of weapons involves yet another qualitatively different type.) Unfortunately, most available research depends exclusively on the simple yes-no ownership question, such that all weapons owners, irrespective of their reasons for ownership, are treated equally.

The most recent nationally-generalizable evidence on reasons for weapons ownership was reviewed in the previous chapter (see Table 5-5). Taking all guns equally, slightly more than 70% of all owners state a sport or recreational motive for possessing the weapon, and slightly less than 25% mention some sort of defensive or protective reason.<sup>1</sup> (The remainder provide ambiguous responses, or no response at all.) It follows, then, that most gun owners fall into the sport and recreational category, and thus, that the available studies of weapons ownership (irrespective of type) are predominantly, but not exclusively, studies of sport and recreational owners. The presence within the gun ownership category of a substantial minority of persons owning a weapon for other reasons, however, introduces more than a little ambiguity into many of the published results. For this reason, the following review places more emphasis on studies that maintain the distinction among ownership types and relatively less on studies that consider all gun owners equally, irrespective of type.

#### Locational Variables: Region and City Size

All studies to have considered the matter report that weapons ownership is highest in rural areas and falls off as city size increases

(e.g., Erskine, 1972; Hamilton, 1972: 546; Newton and Zimring, 1969; Wright and Marston, 1975; etc.). In the nationally representative NORC survey evidence analyzed by Wright and Marston, the proportion owning any weapon falls off from 65.5% among rural residents to 30.5% of residents of cities sized 250,000 and up. The patterns for handguns only are similar, but much less sharp: in the same data, the proportion owning a handgun ranges from 23.1% of the rural respondents to 15.3% of the urbanites. Thus, handgun ownership is rather more evenly distributed over city sizes than is the ownership of shoulder weapons, which tends to be sharply concentrated in smaller-size places.

The city-size pattern supports the contention that most private weaponry is owned for sport and recreational purposes, since most such purposes require access to open and unpopulated areas.<sup>2</sup>

There is a similar consensus on the regional patterns in weapons ownership: private weaponry is more prevalent in the South (and West) than in other parts of the nation (e.g., Erskine, 1972; Newton and Zimring, 1969; Wright and Marston, 1975). The regional effect is also sizable: in the Wright-Marston data, the South-nonSouth difference amounted to 22 percentage points over all guns, and some 16 percentage points in handgun ownership.<sup>3</sup> Some research has attempted to link Southern weapons ownership with a presumed "regional subculture of violence." These studies are reviewed in detail in a later section of this chapter.

Since the South is disproportionately rural, it may be wondered whether the region and city size effects are independent; the available evidence is that they are (e.g., O'Connor and Lizotte, 1978; Wright and Marston, 1975: Table 3). Indeed, both region and city size contribute

significantly and independently to the probability of owning a weapon. Thus, weapons ownership is highest in rural Southern areas, and lowest in the urbanized North.

Several investigators (e.g., Alviani and Drake, 1975: 1-2; Newton and Zimring, 1969) have noted the correspondence between regional rates of private weapons ownership and regional rates of violent crime, namely, that the violent crime rate is highest in regions where the private ownership of weapons is highest. On this basis, it is sometimes argued that private weapons ownership is a cause of violent crime. On the other hand, violent crime is more prevalent in big cities than in rural areas, whereas for weapons ownership, just the opposite is true. As we discuss in some detail in the following chapter, neither the region nor the city size effect says anything about the possible causal relationships between private weaponry and criminal violence, a large number of assertions to the contrary notwithstanding.

#### Social Status: Class, Religion, Race, and Sex

In much of the popularized literature on guns, there is a "commonly held viewpoint that [gun] ownership is more prevalent among...lower socio-economic classes" (Burr, 1977: 8). In contrast to this theme, there is substantial evidence that private weapons owners of all types are disproportionately affluent and middle class. In the Wright-Marston data, there was a 12 percentage point difference in weapons ownership between most and least prestigious groups; in the same data, there was nearly a 25 percentage point difference between most and least affluent, with ownership highest among the most affluent group (1975: Table 2). That weapons ownership tends to increase with income, or occupational

prestige, or both, has subsequently been confirmed in several studies (e.g., Burr, 1977: 8; Lizotte and Bordua, 1980: 237; O'Connor and Lizotte, 1978: Table 1). So far as we have been able to determine, no study has yet reported a contrary result.<sup>4</sup>

Effects of education on weapons ownership are less clear. Burr (1977) reports the regular pattern mentioned above, with ownership increasing as years of education go up. In the Wright-Marston study, however, ownership was highest in the middle of the education distribution, and generally lower among those at either extreme; and others (e.g., Lizotte and Bordua, forthcoming) report no significant educational effect.

Rather surprisingly, there is also a strong religious pattern in private weapons ownership, with white Protestants far more likely to possess a weapon than members of other religious groups (Wright and Marston, 1975; O'Connor and Lizotte, 1978: 424). Further, this effect is statistically independent of city size, region, and all measures of social status (Wright and Marston, 1975: Table 3), and is detectable for both all weapons and handguns only. In magnitude, the religious effect rivals the effect of region; this notwithstanding, no further analysis of the religious effect, beyond that reported in Wright and Marston, has yet been published.<sup>5</sup>

The available evidence suggests no sharp or consistent differences in weapons ownership across racial groups. In the 1973 NORC data analyzed by Wright and Marston (1975), whites were slightly, but not substantially, more likely to own a weapon than non-whites: there was no difference, however, in rates of handgun ownership. Burr (1977: 8) reports, on the basis of Florida data, that "a greater percentage of

whites (47.3%) own handguns than do blacks (39.8%)." In contrast, an analysis of applications for permits to carry handguns in Seattle reports that "blacks are proportionally over-represented" among the applicant pool (Northwood, Westgard, and Barb, 1978: 70). Finally, there are some studies (e.g., Lizotte and Bordua, 1980: 237) that report insignificant race effects. Since some studies report ownership higher among whites (by small margins), others report ownership higher among blacks (by small margins), and still others report no significant difference, the most prudent conclusion is very probably that weapons ownership is not linked in any important way to race.

As noted in the introduction, much of the available literature is based on surveys of household weapons ownership, and the reported sex differences in weapons ownership are correspondingly small.<sup>6</sup> Studies based on a question about personal weapons ownership, however, routinely report that ownership and use of weapons are sharply higher among males than among females (e.g., Kennett and Anderson, 1976; Lizotte and Bordua, 1980; Marks and Stokes, 1976; Northwood, Westgard, and Barb, 1978).

In general, the published literature strongly supports the conclusion that private weapons owners are predominantly rural and small town middle class Protestant males whose ownership of weapons is mostly for sport and recreational purposes. None of these relationships is perfect; in fact, few or none exceed .3, and so there is substantial variation around this main theme. (There are, in other words, substantial numbers of weapons owners in all regions, all city sizes, and among all social, racial, and religious groups.) As to the theme itself, however, there is little serious empirical question.

#### The Southern Subculture of Violence

W. J. Cash, eminent observer of the American South, once remarked that "the South is another land, sharply differentiated from the rest of the nation, and exhibiting within itself a remarkable homogeneity" (1940). There is, in consequence, a large literature on Southern distinctiveness and culture (see Wright, Rossi and Juravich, 1980, for a recent, though partial, review). One element of this "distinctiveness" is, as we have already noted, a substantially higher rate of personal weapons ownership in the South than elsewhere; another element, noted by many observers, is that the rates of interpersonal violence are also higher in the South than in other regions (e.g., Harries, 1974; Newton and Zimring, 1969). These facts have led several authors to argue that there is a distinctive "Southern subculture of violence" -- that is, a package of cultural values transmitted within families and distinctive to the South that glorifies or condones violent behavior (e.g., Gastil, 1971; Hackney, 1969; Reed, 1971).

All existing literature focussed on this presumed "subculture of violence" acknowledges that the simple zero-order effects noted above are not adequate, in and of themselves, as proof of the subculture thesis. Region, that is, correlates with economic development, level of poverty, level of urbanization and industrialization, per cent non-white, and a large number of other factors that may account for the zero-order effects, independently of any "subcultural" explanation. (Restating the point in less technical language, the distinctiveness of the South in rates of interpersonal violence may reflect only that the level of economic development is lower in the South than elsewhere

and thus have nothing at all to do with violence-conducive subcultural values.) Thus, in advance of any evidence, subcultural differences are but one among many plausible explanations of the regional effect.

Results of the initial empirical studies of the topic seemed to support the subcultural explanation (Castil, 1971; Hackney, 1969). Both studies demonstrated a regional effect on the homicide rate that persisted even with certain relevant background variables held constant; that is, even net of various potential confounding effects (such as levels of SES or per cent non-white), Southern states were found to have higher homicide rates than non-Southern states. But this is, as Loftin and Hill (1974) and Erlanger (1975) have pointed out, an extremely weak and indirect test of the subcultural explanation. In both analyses, the only measure of "Southern subculture" was region itself. Thus, both studies attribute to Southern subculture all of the regional effect except that portion due to the specific variables held constant in the regression analyses. This is a plausible attribution only if the control variables in the analyses exhaust all possible explanations of the effect other than subcultural differences -- a very unlikely possibility. (There are also other, more technical, difficulties with both the Gastil and Hackney studies, reviewed thoroughly by Loftin and Hill.) Lacking any direct, independent measure of the values presumably contained within the "subculture," neither study can be definitive about the contribution of these values to the regional differences in rates of interpersonal violence. It may thus be said that the Gastil and Hackney studies show results that are consistent with the "subculture of violence" hypothesis but inadequate to rule other plausible explanations out.

More recent and rather more sophisticated analyses show little or no support for the subcultural explanation, although none of the studies can be considered conclusive. Following procedures closely analogous to the Gastil-Hackney procedures, but including more precisely defined "situational" variables among the regressor set, Loftin and Hill show no statistically significant residual effects for region in the state-by-state homicide rate, once relevant background variables are controlled (1974: Tables 3 and 4). Indeed, most of the zero-order regional effect disappears with a control for the relative poverty levels across states. Contrasting the Gastil-Hackney findings, these data therefore tend to support the conclusion that the Southern distinctiveness in interpersonal violence reflects mainly structural, situational, or socio-economic factors, rather than sub-cultural ones.

However, even this may be a premature conclusion, as Loftin and Hill themselves point out. "The more appropriate conclusion is: our data and those analyzed by Gastil and Hackney are not adequate to delineate precise cultural and non-cultural effects" (1974: 722). The major shortfall in all such studies is the lack of a measure of regional culture that is independent of region itself.

The most recent inquiry into the subculture theory is due to O'Connor and Lizotte (1978). This analysis is based on survey data on individuals, rather than aggregate data on states (as were the studies by Gastil, Hackney, and Loftin and Hill), which has the advantage of avoiding certain aggregation effects that imperil the conclusions of previous studies. Given the focus on individual level data, the dependent variable in the analysis cannot be homicide rate, or, for that

matter, any other measure of homicide, since murderers appear quite infrequently in any national sample, however large. Rather, the dependent variable is whether the respondent's household possesses a gun (more particularly, for the published part of the analysis, whether the household possesses a handgun). It is plausible, however, that a violence-conducive culture would support the ready availability of guns no less than their ready use as a means to settle interpersonal disputes; and certainly, weapons ownership patterns among individuals seems at least as plausible as a test of the subcultural theory as homicide rates across states. Granting in advance, then, that the results from this study are not strictly comparable with the results reviewed above, we consider this test of the thesis as at least equally plausible.

O'Connor and Lizotte reason, not unpersuasively, that if the regional distinctiveness in weapons ownership is a function of a violence-conducive subculture -- a package of values transmitted within families as part of early socialization -- then the effect for the region within which one was socialized would be greater than the effect for the region of current residence. And likewise, were the "situational" variables more important than the cultural ones, then current residence should have the larger effect. The rationale here is obvious: the bulk of cultural learning takes place in early childhood, and so if the tendency to own a weapon is a function of having been raised in a region-specific cultural setting, then the region of birth should be a better predictor of weapons ownership than the region of current residence.

Data for the analysis were taken from the 1973 and 1974 NORC General Social Surveys; the dependent variable for the reported analysis

is a dummy variable for pistol ownership. (The authors remark, however, that equivalent results were obtained when the ownership of any weapon was treated as the dependent variable.) Consistent with results reviewed earlier, the analysis showed a negative relationship with city size (both city size of present residence and city size of the respondent's residence at age 16), a sharp and positive relationship with income, and a strong positive effect on pistol ownership for being Protestant. The coefficient for region of current residence was also significant and in the expected direction (ownership significantly higher in the South); however, the coefficient for region of residence at age 16 was insignificant. These results thus appear to be more consistent with the "situational" than with the "cultural" explanation of the Southern distinctiveness in weapons ownership.

As noted previously, the effect for city size reported in O'Connor and Lizotte is consistent with the effect reported in all other studies: ownership is highest in rural places and falls off sharply as city size increases. The further interesting finding reported here is that, even net of the effects of city size of current residence (and other potentially confounding variables), there remains a strong, also negative, relationship with the size of place where one was raised. This evidence is thus initially consistent with an argument, reviewed in more detail in the next section, that weapons ownership is a strong function of early socialization into something approximately a "gun culture" -- a culture that glorifies not violence so much as rural values and activities and, specifically, the sporting uses of guns.

### Socialization

Much behavior of interest to the social sciences is demonstrably learned in the context of early childhood socialization. There is, for example, overpowering evidence that political party identification is mainly a result of early socialization; the evidence is simply that the party of one's parents is consistently the single best predictor of one's own party affiliation (e.g., Berelson et al., 1954; Campbell et al., 1956). The same is true of religious affiliation and, for that matter, many other things.

There is, in the same vein, substantial evidence that private weapons ownership is also, to an important extent, a function of early socialization into what may be called a "gun culture." Some elements of this culture have been discussed in previous chapters.<sup>7</sup> A key value in this culture is the sporting use of weapons -- for hunting, target shooting, and other recreational purposes. The values of this culture are best typified as rural rather than urban: the stress is on independence, self-sufficiency, mastery over nature, closeness to the land, and so on. Within this culture, the ownership and use of firearms are both normal and normatively prescribed, and training in the operation and use of small arms is very much a part of what fathers are expected to teach their sons -- in short, part and parcel of coming of age. The strong correlation between city size (both of current residence and of residence in one's youth) and weapons ownership is a good, if indirect, indicator of the predominantly rural nature of the culture in question.<sup>8</sup>

So far as we have been able to determine, the first direct empirical evidence on the potential role of socialization in the private ownership

of weapons is that due to Marks and Stokes (1976). This research was not directly focussed on correlates of weapons ownership, but rather on the question whether differential familiarity with firearms might be a plausible explanation of sex and regional differences in the suicide rate. Still, the findings are relevant to the concerns of this chapter. Data are based on questionnaires administered to students in two universities (one in Wisconsin, the other in Georgia), and so the sample is predominantly young.

One question asked whether the respondent had ever fired a gun; among a student sample, this is not an implausible indicator of "socialization" into firearms use. In the South, some 81% had (98% of the males, 59% of the females); in the North, 56% had (88% and 40% of the males and females, respectively). Notice that this pattern reproduces the known correlates of weapons ownership among adults (higher in the South and among males) and is thus consistent with an argument that adult weapons ownership is a function of early socialization.

Socialization into firearms use evidently begins at a relatively early age: among Southern males, for example, more than a third of those who had ever fired a weapon (35.5%) reported first having fired one at age 9 or earlier, and 76% had fired a gun at least by age 12. Among Southern females, 43% had fired a gun before age 12; outside the South, the equivalent percentages are 55% for males and 42% for females. Large majorities of all groups (ranging from 66% to 94%) had first fired a gun at least before age 16. One obvious inference from these data is that large proportions of adult weapons-owners have experiences with the use of firearms stretching back well into childhood.

Virtually all (97%) of the respondents in the study who had ever fired a gun were introduced to small arms by males, mostly male relatives (typically, fathers), which suggests (along with the tendency of males to own guns at a much higher rate) that the gun culture is also heavily masculine as well as rural.

For most categories in the analysis, the tendency ever to have fired a weapon is strongly related to whether the respondent was reared in a home where guns were kept. Among Southern males reared in homes with a gun present, 99.4% (every respondent but one) had fired a gun; among Southern males reared in non-gun-owning homes, 91% had fired a gun. Thus, virtually all Southern males are exposed to weapons at an early age, whether their household possesses a weapon or not. In the remaining three cells, however, the effect of being reared in a gun-owning home is much stronger, with percentage differences in having fired a gun ranging from 23 to 35 points. Except for the Southern males, then, the evidence is strong that being reared in the "gun culture" (that is, in a household where guns are routinely present) is related to socialization into weapons use (that is, having at some time in early life fired a weapon), also consistent with the argument that adult weapons ownership and use are functions, at least in part, of socialization into the gun culture.

Several other studies have reported results consistent with the findings of Marks and Stokes, many showing even more directly the effects of early socialization on adult weapons ownership. For example, Deiner and Kerber (1979) have presented results from data on a small and nonrepresentative sample of Illinois males which show that "a major

difference between gun-owners and nonowners was that the former group had been in a variety of situations which provided contact with guns" (1979: 230). In particular, gun owners in the study were much more likely to have grown up in rural areas and small towns than in the big cities (thus reproducing the common city size result); further, and more relevantly, "eighty-six percent of the gun-owners' fathers owned guns, compared with only 30% for nonowners" (1979: 230). Thus, as in Marks and Stokes, having been reared in a gun-owning home is strongly related to weapons ownership. Also consistent with the Marks-Stokes findings, 78% of the Deiner-Kerber gun-owners had themselves owned a gun before age 18, again suggesting that socialization into gun use begins at an early age. There were three additional findings relevant to the socialization argument: (i) 43% of the owners had, as children, attended summer camps where shooting firearms was part of the program, vs. 22% of the nonowners. (ii) 57% of the owners were military veterans, vs. 22% of the nonowners. (The effects of veteran's status on weapons ownership are considered in more detail later.) And (iii) the gun owners were substantially more willing than the nonowners (92% vs. 52%) to purchase toy guns for their own children.

Caetano (1979) has reported additional results, unfortunately also based on a small, atypical sample (in this case, 467 night students at Cal State, San Bernadino) that are consistent with the socialization argument. In this study, parental gun ownership and respondent gun ownership were correlated ( $\gamma$ ) at .55; parental ownership of weapons was thus, by far, the single best predictor of weapons ownership.

The most sophisticated, informative, and persuasive inquiry into socialization as an explanation of adult weapons ownership is the series of studies by Bordua and Lizotte (1979; Lizotte and Bordua, 1980; forthcoming). The first paper in the series is based on county-level aggregate data for the state of Illinois. Illinois is one among several states that require some form of permit to legally possess any weapon; in Illinois, the requirement is for a "Firearm Owners Identification Card" (FOIC). In the Bordua and Lizotte analysis (1979), the number of such cards per county is treated as the dependent variable.

The analysis contains a large number of other county-level indicators, of which two are of interest to present concerns. One is a set of indicators that index what the authors call "a firearms sporting culture" -- that is, a cultural milieu that favors the sporting uses of weapons. In this case, the indicators are (i) the number of gun sports magazine subscriptions in the county; and (ii) the number of hunting permits issued in the county in a single year (1973). A second set of indicators is built out of county-specific murders, robberies, and aggravated assaults and thus indexes the county's violent crime rate. Both the crime and magazine variables are normed for county population.

Findings from the analysis are straightforward: "Our sporting culture variables are the only good predictors of male FOIC ownership. Hunting and sporting magazines both tend to drive up ownership. The crime rate of a county has no direct effect on male registered ownership" (Bordua and Lizotte, 1979). Further, "the only predictor of FOIC ownership for minors is adult male FOIC ownership which has a strong

positive effect." Among males and minors, then, FOIC ownership (or in other words, legal weapons ownership) responds far more strongly to the existence of a firearms sporting culture than to any indicator of violent crime. "We have found no empirical evidence at the aggregate level to support the assumption that men legally own firearms uniquely for protection as a response to violent crime."

Findings for female FOIC ownership were rather different. Women's ownership, as men's, is related to hunting and the per cent of veterans in the county, and, as minors', is related to male ownership. For women, however, two additional factors are significant: the cube of the crime rate, and the per cent of young (18-34 year old) blacks in the county. Thus, "other cultural and situational factors being equal, women seem to buy guns in response to crime."

This aggregate analysis by Bordua and Lizotte therefore tends to support two conclusions: (i) that legal weapons ownership among men and minors is predominantly a function of exposure to and socialization into what we have called a gun-sports culture; and (ii) that legal ownership among women responds in part to this culture and to crime or the fear of crime. The results for males and minors, of course, are broadly consistent with those of all other studies reviewed in this section.

A more detailed and fine-grained analysis, based on individual-level survey data, has also been published by these authors (Lizotte and Bordua, 1980). The study is based on 764 telephone interviews conducted in 1977 in Illinois. Respondents were first asked how many firearms they owned, and then, "For what purpose do you own the fire-

arm(s)?" Respondents were probed for all reasons for firearms ownership, which means that both sporting and defensive ownership reasons could be given by any single respondent. There are, thus, two dependent variables in the analysis: weapons ownership for sport, and weapons ownership for self-defense. Any given respondent, of course, could be scored "yes" on either or both variables.

We note first that 18% of the respondents were scored as owning a gun for sport, and about 6% as owning a gun for defense.<sup>6</sup> The ratio of the two (roughly, 3 to 1) is thus consistent with all other data on the reasons for private weapons ownership (see, e.g., Table 5-5, above, and footnote 1, this chapter). This comparison with previous findings, of course, is not exact, since in this study any one respondent could theoretically possess a weapon for both reasons. Empirically, however, this outcome was exceedingly rare: "What is the probability of owning a gun for protection given the probability that a gun is owned for sport? The answer is zero. Owning a gun for protection is not a function of owning a gun for sport [and vice versa]" (Lizotte and Bordua, 1980: 240). As noted in the introduction to this chapter, these data thus strongly suggest that there are not one but two distinct gun "cultures" -- the first and substantially the larger being a culture of sport and recreation, and the second being a "culture" of defense.<sup>10</sup> The conclusion is that "those who own guns for sport are very different from those who own for protection" (1980: 240).

Analysis of these two categories of weapons ownership confirms this conclusion. "Income, sex, parents' gun ownership, and age at first gun are the only significant determinants of gun ownership for

sport" (1980: 237). That is, ownership for sport increases with income (consistent with all previous research), is substantially higher among men than among women, is considerably higher among respondents reared in gun-owning households, and is also higher among persons who themselves first acquired guns at relatively earlier ages. The conclusion is straightforward and thoroughly consistent with the socialization argument: "Gun ownership for sport is the result of financial status, sex, and the early socialization into gun use" (1980: 237).

Ownership for protection is entirely different and is predicted by none of the above-mentioned variables: "Violent crime in the county is the only significant predictor of owning a gun for protection" (Lizotte and Bordua, 1980: 239; our emphasis). Of some additional interest, gun ownership for defense "is not an extension of a general home defense orientation or a product of any of the other variables in the model, such as violent attitudes or racism" (1980: 239). In the same vein, neither criminal victimization nor the perceived crime rate (i.e., fear of crime) predicted defensive ownership. The only distinguishing feature of the defensive gun owners in this study was that they resided in counties where the actual rate of violent crime was relatively high.

These findings allow us to qualify our conclusions about the effects of early socialization on adult weapons ownership in important ways that previous studies have not allowed. There are, in the main, two (legitimate) reasons for weapons ownership: sport and protection. Most gun owners -- about three-quarters of the total -- fall into the first of these categories, and their ownership of weapons is predominantly a function of early socialization into gun use. Thus, ownership for

sport is essentially cultural in nature and reflects a package of values and favored activities passed from parents to children as part of coming of age. Ownership for protection, in contrast, is strongly determined situationally, responding mainly to the existence of violent crime, and largely (if not entirely) impervious to the effects of variables that account for sport ownership. As these data show clearly (at least for Illinois), sport owners and defensive owners are qualitatively different types.

A related theme in the socialization argument concerns military socialization into weapons ownership and use. That veterans are more likely than nonveterans to own a weapon has been reported in several studies (e.g., Erskine, 1972; Bordua and Lizotte, 1979; Newton and Zimring, 1969; Deiner and Kerber, 1979; etc.).<sup>11</sup> Several explanations for this effect have been offered: for example, that military experience socializes individuals directly into weapons use, the socialization then being carried back to civilian life; or that veterans acquire guns while in the military and bring them back into civilian life; or that the military experience predisposes veterans to violent or authoritative outlooks, which in turn result in civilian weapons ownership.

Lizotte and Bordua (forthcoming), in contrast, have considered the possibility that the relationship is spurious, reflecting a process of self-selection into the military in the first place. The argument, in short, is that military service appeals preferentially to persons from rural backgrounds. "Hence, veterans would be more likely to have been socialized into gun use at an early age, and more likely to continue this usage later in life" (forthcoming: 2). The evidence from the

Illinois phone survey is consistent with this interpretation. Once the relevant socialization variables are held constant (parental gun ownership, age at first gun, etc.), the effect for veteran's status drops to insignificance. The most plausible interpretation is thus that early socialization into gun use predisposes individuals towards enlisting in the armed services and towards gun ownership as an adult, with no independent effect for veteran's status once early socialization is held constant.<sup>12</sup>

One additional strand of evidence worth reviewing in the context of socialization into a gun culture is that concerning how privately owned weapons are acquired and disposed of. Such evidence as there is on this topic (and sadly, there is not very much) shows a very extensive "swap" market in private arms -- which in turn suggests that private owners are known to one another and enter into interactions and exchanges on the basis of their gun ownership. Burr (1977) has presented evidence on the private acquisition of handguns in Florida: of the 433 handguns in the analysis, 43% were purchased from a retail dealer and 6% were bought from a pawn shop; thus, slightly less than half the handguns were acquired through normal retail channels. Roughly 16% were bought from a private party, 15% were received as gifts, and 7% were acquired through trades or exchanges. (The remainder were acquired in a variety of odd-lot fashions.) Thus, a sizable proportion of the "flow" in handguns takes place outside the usual retail channels, consistent with the argument of a gun culture.

Burr also inquired whether his respondents had ever sold or disposed of a handgun; there are 333 "disposed" handguns represented in the sample.

Of these, only 9% had been sold to a firearms dealer. The largest share (37%) had been sold to another private party, 11% had been traded, 2% had been pawned, and 16% had been given as gifts. Rather surprisingly, about ten per cent had been "disposed of" by theft, and the remainder are scored as "other." So here too, the evidence for a private "swap" market in firearms among gun owners is substantial.

The only recent national evidence on this topic is contained in the 1978 DMI survey discussed in previous chapters. The DMI format gives respondents "a list of places where guns can be obtained," then asks, "Please indicate the place where your family's last firearm was obtained." Results are very close to the Burr data for Florida handguns: 35% were obtained from a sporting goods or department store, 19% from a gun shop, and 2% from a pawnshop, for a total of 56% obtained through usual retail channels. Two per cent were obtained at a gun show, 19% had been received as gifts, and 13% had been obtained through private sale or trade. (Again, the remainder are scored as "other" or refused to answer the question).<sup>13</sup>

The lessons from these "hard" data are reinforced by an enormous amount of impressionistic evidence on the private "swap" market in firearms. Virtually every gun-sports magazine runs a classified section where private owners advertise their willingness to trade. This private "swap" market is sufficiently extensive that there are entire publications devoted exclusively to servicing it. One such is a twice-monthly newspaper-format magazine entitled Shotgun News, which advertises itself as "The Trading Post for Anything That Shoots." The typical issue consists mainly of small-type classified ads, most apparently placed by

private owners, announcing wants for or offerings of firearms. The issue for September 15, 1980, runs to 224 pages, and does not appear to be atypical in the least.

In summary, there are various fragments of evidence available to suggest the existence of a "gun culture," one that is predominantly male and rural in orientation and that glorifies the use of weaponry in sport; and there is substantial evidence (unfortunately, none based on nationally representative data) that early socialization into this culture is the predominant explanatory factor in private weapons ownership and use among adults, particularly among adult males who own weapons for sporting purposes. Ownership among adult women is apparently rather more complicated, responding in part to these socialization effects but also to crime or the fear of crime. Finally, there is no evidence that the ownership of weapons for self-defense results from early socialization. So far as can be told, roughly one private firearm in four is owned primarily for defensive purposes, and the evidence suggests that these weapons are purchased mainly in response to crime.

#### Personality Characteristics

Although there is a rather extensive speculative literature on the personality characteristics of private weapons owners (e.g., Sherrill, 1973; Stickney, 1967; Daniels, Gilula, and Ochberg, 1970), virtually nothing of empirical substance is known about this topic. The themes of the speculative literature are well-known and, with few exceptions, condemnatory and derogatory. In one view (the psychoanalytic), weapons are phallic symbols representing male dominance and masculine power. A related theme concerns the presumed need for power and virility.

Fear, psychological insecurity, authoritarianism, violence-proneness, generalized pessimism, and so on, are also commonly advanced as personality abnormalities to explain weapons ownership.

Contrasting these themes, such evidence as there is suggests no sharp or distinctive personality differences between gun owners and nonowners.

The common hypothesis, that fear in general and fear of crime in particular would be correlated with weapons ownership, is contradicted by all available studies (e.g., Lizotte and Bordua, 1980; Williams and McGrath, 1976; Wright and Marston, 1975); in fact, most of these studies report a slight tendency for weapons ownership to be lower among the more fearful.

Williams and McGrath (1976) have derived five personality or quasi-personality measures from the NORC General Social Survey data and examined their correlation with household weapons ownership. Fear, as already noted, was significantly correlated with weapons ownership, but in the opposite direction. Victimization by crime was not significantly correlated with weapons ownership (see also Wright and Marston, 1975). There was a moderately strong negative correlation with a measure of socio-political liberalism (liberals less likely to own guns), but this effect was reduced to statistical insignificance with city size controlled, suggesting that the correlation with liberalism is spurious. A measure of violence-proneness was positively correlated with weapons ownership in the anticipated direction, but the correlation ( $\gamma = .2$ ) is modest at best. Finally, pessimism was found to be negatively correlated with ownership ( $\gamma = -.16$ ): pessimists, that is, are slightly less likely

to own guns. With the exception of the effect of violence-proneness, then, all the remaining effects are either insignificant or run in the direction opposite to that posited in the speculative literature.

Much the same results are reported in what is, to our knowledge, the only other empirical study of the topic, an analysis of 37 male gun owners and a matched sample of 23 nonowners published by Deiner and Kerber. Some of these results were reviewed in an earlier section of this chapter. The study included a large number of personality measures, most of them adapted from the California Psychological Inventory items. Findings were straightforward: "This study demonstrates that gun ownership per se is not indicative of unusual motivations or of deviant personality characteristics" (1979: 237). There were some differences of potential interest: for example, "gun owners tended to be more open-minded and tended to have a higher need for power;" also, the gun owners were less sociable and affiliative (1979: 234). But these differences were, again, modest and the results for the gun owners were all well within the "normal" (vs. "abnormal") range. In sum, "there was no evidence in the present study that the average gun owner exhibits atypical personality characteristics" (1979: 236).<sup>14</sup>

Although the Deiner-Kerber data are hardly definitive (indeed, they are scarcely better than nothing at all), these authors nonetheless have what we would consider to be the last word on the topic. Their article concludes with this observation: "Since about one-half of the households in the U.S. contain a gun, it seems somewhat unrealistic to attribute severe abnormal characteristics to the average gun owner

(unless one is willing to see considerable pathology in most people)"  
(1979: 236).

Conclusions: The "Typical" Gun Owner

"We were once again proven a savage, uncontrollable, unpredictable, gun-ridden, and murderous people..."

Robert Coles, commenting upon  
Charles Whitman's slayings at  
the University of Texas.

"Could any response be more American than that of  
the two New York youths who shot and killed a store-  
keeper because they asked for apple pie and he had  
offered them Danish pastry instead? Or the husband  
who shot and killed his wife for being thoughtless  
enough to run out of gas on the way home?"

Robert Sherrill, in The  
Saturday Nite Special, p. 5.

In the popular literature on guns (and even in much of the scholarly literature), the "typical" private weapons owner is often depicted as a virtual psychopath -- unstable, violent, dangerous. The empirical research reviewed in this chapter leads to a sharply different portrait. The key findings are as follows:

Most private weaponry is possessed for reasons of sport and recreation; sport guns apparently outnumber defensive guns by roughly three to one. The uses of weaponry for sport are correlated with city size, but not perfectly; large numbers of sport users can be found even in the largest central cities. Relative to non-owners, gun owners are disproportionately rural, Southern, male, Protestant, affluent, and middle class. Most adult weapons owners were socialized into weapons ownership and use during their early childhood and thus have experience in the use

of weaponry spanning virtually the whole of their lives. There is no evidence suggesting them to be an especially unstable or violent or maladapted lot; their "personality profiles" are largely indistinct from those of the rest of the population.

Footnotes

<sup>1</sup>That most weapons are owned for recreational, vs. defensive, reasons is a common finding in the literature. In the Bordua-Lizotte Illinois survey, for example, recreational ownership exceeded defensive ownership by about 3 to 1. (This survey is reviewed in detail later in the chapter.) Deiner and Kerber (1979: 230) report that among their small sample of gun owners, "recreation...was the most frequently cited reason for owning a gun." Additional evidence on this point comes in the strong correlation between weapons ownership and hunting, the most common of the various gun sports. The following tabulation is based on the NORC General Social Survey for 1977, the only year in the series where both a gun ownership and a hunting question were asked:

Gun Ownership	Do you (or your spouse) go hunting?		
	YES	NO	TOTAL
YES	85.4	36.4	50.7
NO	14.6	63.5	49.3
N=	444	1079	1518
(%=)	(29.2)	(70.8)	

There are three findings of interest in this table. (i) Consistent with virtually all previous national household surveys, this too shows roughly half the households in the country possessing a weapon. (ii) Roughly 30% of the national adult population hunts. This is a higher proportion than would be expected given the hunting license data reviewed in Ch. 3 (an estimated hunting "rate" in 1975 of 132 hunters per thousand population). This implies either that many hunters are unlicensed, or

that many people who hunt do not hunt each and every year, or, of course, both. (iii) Households with at least one hunter present are sharply more likely to own a weapon than households with no hunter present (85.4% to 36.4%), thus suggesting, again, a very strong link between recreational activities involving guns and weapons ownership.

<sup>2</sup>On the other hand, one must take care not to exaggerate. Skiing, for example, also requires access to "open and unpopulated areas," yet many city dwellers ski. Prime hunting land in upstate New York, to cite another example, is not more than a two-hour drive from Midtown Manhattan.

Direct evidence on hunting behavior by city size is contained in the NORC survey for 1977 (see previous note). Herewith, the relevant tabulation:

City Size	Do you (or your spouse) go hunting?		
	YES	NO	(100%)
<u>Within SMSA</u>			
Over 250,000	12.7	87.3	267
50-250,000	21.3	78.7	160
Suburbs	20.4	79.6	358
Other Incorporated	28.6	71.4	140
Other Unincorporated	34.9	65.1	86
<u>Not in SMSA</u>			
10-49,999	37.4	62.6	99
2,500-9,999	44.4	55.6	99
<2,500	40.3	59.7	72
Open Country	50.8	49.2	246

[Source: 1977 NORC GSS]

Again, several interesting points are revealed in this table.  
 (i) Consistent with the point made in the text, hunting increases as city size decreases. The proportion who hunt is thus lowest among residents of large central cities (12.7%) and highest among persons living in open country (50.8%). (ii) The general pattern notwithstanding, there are non-trivial fractions who hunt in all categories of city size. Even in the largest central cities (size 250,000 and up), roughly one adult in eight hunts.

The next tabulation shows the relationship between city size and the proportion owning any weapon, as estimated from the combined NORC surveys for 1973, 1974, 1976, and 1977 (all surveys in the series containing the gun ownership question). As in all previous studies, ownership and city size are sharply and inversely related. In these combined data for over 5,000 respondents, the spread in ownership between most urban and most rural places amounts to 48 percentage points (27.2% to 75.3%).

The second column in this table shows the estimated ratio of hunters to gun owners over categories of city size; the cell entries show just the percentage of hunters (from the previous table) divided by the percentage of weapons owners (from this table). The general pattern revealed here is that this ratio increases as city size decreases, or in other words, that the ownership of weapons for reasons other than hunting tends to be highest in the larger places. Still, even in the central cities, roughly half of all gun owners hunt.

<u>City Size</u>	<u>Percent Owning Any Weapon</u>	<u>Ratio of Hunters to Gun Owners</u>
<u>In an SMSA</u>		
Over 250,000	27.2	.47
50-250,000	44.5	.48
Suburbs	39.4	.52
Other Incorporated	47.6	.60
Other Unincorporated	56.6	.62
<u>Not in an SMSA</u>		
10-49,999	54.8	.68
2,500-9,999	53.5	.83
<2,500	66.9	.60
Open Country	75.3	.67

<sup>3</sup>The following table shows the proportion of weapons owners across regions, as estimated from the combined NORC data for all years where the gun ownership question was asked:

<u>Region</u>	<u>Own a Gun?</u>			
	<u>YES</u>	<u>NO</u>	<u>NA</u>	<u>N (=100%)</u>
New England	23.8	75.8	0.4	277
Middle Atlantic	28.3	71.4	0.3	1029
E. North Central	50.2	49.1	0.7	1299
W. North Central	50.7	47.9	1.4	428
South Atlantic*	60.3	39.2	0.5	1156
E. South Central*	71.8	26.9	1.3	308
W. South Central*	55.1	44.3	0.6	474
Mountain	61.8	37.0	1.3	238
Pacific	39.4	59.4	1.2	779
TOTAL	47.7	51.5	0.7	5988

\*The South, by conventional definition.

As in all other comparable data, the regional variation in weapons ownership is substantial. The lowest ownership rate comes among the New England states, and the highest, among the states in the East South Central region (Kentucky, Tennessee, Mississippi, and Alabama). The spread in ownership across these extreme cases amounts to 48 percentage points. Recoding the data into the conventional South and non-South categories, the ownership rates are 60.8% and 41.5%, respectively -- broadly consistent with all other data.

<sup>4</sup>The income effect is readily detectable in the combined NORC data. Among the least affluent (total family incomes less than \$3,000), 31.9% claim to possess a weapon; among the most affluent (\$20,000 and up), the proportion is 55.2% -- a spread of slightly more than 23 percentage points. Wright and Marston (1975) suggest several possible explanations of the income effect, perhaps the most plausible of which is that family weaponry is, in general, a discretionary purchase and thus tends to increase with family income.

<sup>5</sup>In the combined NORC data, the proportions owning any weapon are 54.7%, 36.7%, and 14.9% for Protestants, Catholics, and Jews respectively. The Protestant-Catholic difference (18 percentage points) in these data is thus about as sharp as the South-non-South difference (19 percentage points). Compared to the regional effect, however, there is virtually no literature available on the religious effect. (For example, there is no literature at all arguing for a Protestant "subculture of violence.")

<sup>6</sup>In the combined NORC data, for example, which are based on a household ownership question, 53% of the males and 44% of the females report a weapon in the home. In contrast, studies based on individual ownership data routinely report that gun ownership is some 4 to 5 times more common among men than among women.

<sup>7</sup>The following brief account of "the gun culture" is based mainly on impressionistic and episodic evidence. So far as we have been able to determine, no serious ethnographic study of this culture has ever been undertaken. Richard Hofstadter's well-known piece, "America As A Gun Culture," is useful in this connection, but is more in the nature of a diatribe than an empirical research study. Oddly enough, as the following review in the text makes plain, there is far more evidence on socialization into this culture than there is on the characteristics and values of the culture itself.

<sup>8</sup>But see footnote 2, above.

<sup>9</sup>We emphasize again that these figures refer to individual ownership of weapons. "While about 20% of respondents over age 18 own a gun, about 50% of families own at least one gun" (Lizotte and Bordua, 1980: fn 2). These ownership data are thus broadly consistent with the available national survey data on the topic.

<sup>10</sup>"Culture" appears here in quotation marks because "there is no evidence of a subculture of defensive gun ownership. While we can locate a group of protective gun owners, there is no indication of contact among them. That is, having friends who own guns for protection does not predict the respondent's protective ownership" (Lizotte and Bordua, 1980: 239).

<sup>11</sup>Two of the NORC GSS surveys have both weapons ownership and a question on veteran's status. Among the veterans, 56% reported owning a household weapon; among the rest of the sample, the proportion was 47%. The difference is thus modest but consistent across most studies.

<sup>12</sup>The National Rifle Association has reviewed prior drafts of this material and points up an interesting implication of the Lizotte-Bordua finding. The finding implies, rather directly, that early socialization into the gun culture predisposes individuals to enlist in the armed forces later in life, which suggests that the gun culture is positively functional for the success of the volunteer army.

<sup>13</sup>Newton and Zimring (1969: Ch. 3) present similar evidence from the 1968 Harris poll on "How Firearms are Acquired." Their conclusion: "Almost half of all long guns, and more than half of all handguns, are acquired secondhand. New firearms and a large number of used firearms are purchased from sporting goods stores, hardware stores, and other firearms dealers. But about half of secondhand firearms are acquired from friends or other private parties" (1969: 15).

It has been pointed out by Burr and others that much firearms acquisition thus takes place outside "regulatable" channels, that is, as sales or trades between private individuals.

<sup>14</sup>The NORC surveys have some, although not much, information on "psychological adjustment." Two items are of particular interest in this connection: one on general life happiness, and a second on marital happiness. The crosstabulations of these items with gun ownership are as follows:

	<u>OWNS GUN</u>	<u>DOES NOT</u>
"Would you say you are..."		
Very Happy	39.6	32.1
Pretty Happy	50.0	53.2
Not Too Happy	10.4	14.6
%	100.0	99.9
N	2856	3078
"How would you describe your marriage..."		
Very Happy	68.8	65.6
Pretty Happy	28.9	30.7
Not Too Happy	2.3	3.7
%	100.0	100.0
N	2252	1678

There is little difference in either happiness or marital happiness between owners and nonowners; the slight differences shown here, however, both favor the gun owners. (They are, that is, slightly but not significantly happier than nonowners.)

CHAPTER SEVEN  
ON CRIME AND PRIVATE WEAPONS

It is often remarked that the United States is among the most heavily armed private populations in the Western world, and further, that the rate of criminal (and accidental) violence is higher here than virtually anyplace else. The relationship between these two facts, if any, has been the object of much speculation and assertion, and of some empirical research. Such research as exists on the topic is reviewed in the present chapter.

In general, at least three distinct relationships between violent crime and the incidence of private weaponry have been hypothesized. First, it is possible that private weaponry is an important cause of criminal violence. This, for example, is the theme enunciated in a chapter title from the Newton-Zimring (1969) report: "More Firearms, More Firearms Violence." The underlying idea is that as there are more firearms available, more crime comes to be committed with them. This view posits that much criminal violence is not intentional, but rather evolves in the "heat of the moment" and becomes criminal (assaultive, homicidal, etc.) only because the means of violence (firearms) are readily at hand. (On this, see Chapter Eleven, below.) In this view, then, criminal violence could be curbed -- at least to some extent and for some important class of crimes -- were the availability of private weaponry reduced.

Secondly, it is possible that private weaponry is an important effect of criminal violence. This theme was reviewed in some detail in Chapter Five, above, and indirectly in Chapter Six; here, the general idea is that persons arm themselves as a means of defense against crime,

violence, and the related pathologies of modern life. The policy implication of this view is, of course, the obverse of the first view: namely, that the incidence of private weaponry could be reduced were criminal violence somehow curbed.

Note that while the first and second views lead to opposite policy implications, both have the same research implication, that is, some positive association between the incidence of private weaponry and the rate of criminal violence. The issue that separates them is which is cause and which effect.

Still a third possibility is that private weaponry is an important deterrent to criminal violence. As people arm themselves more and more heavily, their risk from criminal violence is correspondingly reduced. The research implication is, presumably, the reverse of that stated above; here the expectation would be, all else equal, crime is lowest where the incidence of private weaponry is highest.

It must be noted in advance that these are not mutually exclusive possibilities. Certainly, at least some crimes occur only because the means with which to commit them are available. Likewise, at least some people purchase weapons in response to criminal violence; as intimated in the previous chapter, this may be especially true of recent acquisitions of defense weapons among women. And finally, there is no doubt that at least some crimes at some times and some places are deterred because the potential victim is armed. The issue here, as elsewhere in this volume, concerns the relative proportionalities involved.

Further, all three hypothesized relationships could operate

simultaneously. Crime, let us suppose, increases for whatever reason. As one response to this increase, the purchase of weapons for defensive reasons increases. The then-enhanced presence of private weaponry acts as a deterrent to some crimes (e.g., rape, burglary, robbery) but functions to increase the prevalence of other crimes (assault, homicide, firearms suicide). In this case, private weaponry would respond to some crimes, deter others, and cause still others, all at the same time.

Aside from the possibility that all three hypotheses could well be true simultaneously, there are other serious barriers to a decisive choice among them. Some are strictly logical. For example, it is self-evident that a deterred crime is a relatively undetected crime. This would be less true of crimes deterred "in process" (i.e., burglars frightened off by homeowners brandishing weapons) because, presumably, at least some such incidents would be reported to the police. But crimes that are never even attempted because of advance knowledge that the potential victim is armed (i.e., the burglary that does not occur because the homeowner is a well-known marksman) would never show up in any data source. And even if it could be shown that certain types of crimes were just as common in areas with a high density of private weaponry as in areas where this density is low, the argument might still be made that the rate of crime would nonetheless be higher yet in the heavily armed areas were the citizenry not quite so well armed. As is well known, the "deterrence" effect even of relatively direct criminal sanctions (e.g., sentencing) is notoriously difficult to estimate. Estimating the deterrence effects of private weaponry

is certain to be more difficult still.

Other barriers are more methodological in character. First is the age-old problem of inferring cause from correlation. Even if it could be shown that violent crime was highest in areas where the private possession of weapons was highest, it would not be clear whether it was weaponry causing crime, or crime causing people to arm themselves in protection against it, or, of course, both.

It is also possible that such a relationship would be thoroughly spurious. To cite one possible example, crime tends to increase as economic conditions deteriorate. Following a theme noted in an earlier chapter, it is also likely that hunting for meat increases as economic conditions deteriorate. Extrapolating from these possibilities, one might expect both high rates of crime and high rates of weapons purchases to occur in economically depressed areas -- for example, the South. In this example, there would be a detectable correlation between crime and weaponry across region, but no causal relationship; rather, the correlation would be the spurious result of both variables being causally linked to underlying economic conditions.

One immediate implication of these points is that even demonstrable correlations between private weapons density and the crime rate over relatively large and heterogeneous geographical aggregates (e.g., nations, regions, states, even counties) are, in themselves, relatively noninformative with respect to the issues at concern in this chapter. Even if the imputation of cause in such data were not a problem (and, of course, it always is), such large aggregates are far too gross and differ in too many (typically uncontrolled) ways for

such comparisons to have much meaning.

Consider the extreme, but not uncommon, case of international comparisons. Much is often made of such comparisons, as, for example, between the United States and the United Kingdom, or between the U.S. and other Western democracies. In general, the comparison consists of a simple note to the effect that there are more guns, and more gun violence, in the United States than somewhere else, and this is in turn taken as evidence that guns are a cause of crime and violence. There are at least two additional serious problems in taking these comparisons as evidence for a causal relationship between private weaponry and crime:

(i) Cases for comparison are chosen purposively and selectively; different choices lead to different conclusions. As Bruce-Biggs (1976) has noted, for example, the density of private weaponry (i.e., proportional weapons possession by households) is at least as high in Norway and Switzerland as it is in the United States, but rates of criminal violence are very low in both nations.<sup>1</sup> In sharp contrast to the U.S.-England or U.S.-Canadian comparisons, the comparison with these nations suggests that there is nothing intrinsic to a high rate of private weapons possession that increases criminal violence. One may thus come to entirely opposite conclusions depending solely on which other nation is contrasted with the United States.

(ii) In general, any two nations (or, for that matter, any two regions, states or counties) will differ in a large number of ways over and beyond differences in weapons ownership and in the local crime rate. Such differences may be historical, legal, cultural, or social, and are generally manifold and multifaceted, both in nature

and in effects. Strictly speaking, all such factors that might themselves affect the incidence of crime would have to be held constant before the direct effects of private weaponry on crime could be legitimately detected. Stated more directly, there are many differences between, say, the U.S. and England that might be the (or, better, a) cause of the difference in crime rate. In the absence of controls for these other potential causative factors, the inference that the crime difference results from the differences in weapons ownership is gratuitous. To a greater or lesser extent, the same would be true of any two regions, states, counties, or other gross geographical aggregates.

The conclusion that flows from these purely methodological considerations is that zero-order comparisons of weapons ownership and crime over large geographical aggregates tell us little or nothing about the possible causal relationship between these two factors. Unfortunately, as the following review makes plain, this is the most common research design employed in this area of the literature.

In general, one's statistical ability to control many factors simultaneously increases with sample size; thus, legitimate causal inferences about private weaponry and crime are more readily made if a number of geographical aggregates being analyzed is relatively large. This would, for obvious reasons, tend to rule out regions of the country, and possibly even states, as useful units for such an analysis. In this vein, cities and counties are more likely and potentially more informative possibilities, and some city and county based studies have been undertaken, as reviewed below. Such studies

have the further advantage that the units of analysis are smaller and more homogeneous; as a general rule, one's confidence in causal inference from ecological (that is, aggregative) correlation increases as the homogeneity of the underlying units increases.

However, using cities or counties as units in an analysis of the effects of private weaponry on crime encounters yet another formidable methodological problem, namely, getting reliable city-by-city or county-by-county estimates of the rate at which private weapons are possessed. Unlike crime data, which are routinely recorded for both city and county levels, there are no readily available data anywhere that show city- or county-level weapons ownership rates, least of all over large numbers of units. Further, the expense of generating such data for a large sample of cities or counties is insurmountably prohibitive. Comparative large-sample studies of cities or counties as units are therefore usually based on highly inferential and potentially quite unreliable estimates of across-unit differences in weapons ownership.

As previous comments suggest, most research that has looked at crime or violence as a function of private weapons ownership is based on aggregative data. One reason for this is that while, in absolute terms, there is "a lot" of criminal violence in the United States, there is, proportionally, very little. We note in Chapter Eight that there are about a million "serious gun incidents" per year (this calculated with the broadest possible definitions). In contrast, the total stock of private weaponry is on the order of 120 million guns. The proportion of gun offenders among private gun owners is therefore

extremely low, and for this reason, few or no firearms offenders appear in population surveys of the average size.<sup>2</sup> For this and other reasons (for example, the possible reticence of respondents to report incidences of violent criminality among household members), the possibility of addressing the issue of private guns as a cause of criminal violence directly via population surveys appears to be quite limited, and this has in turn meant that virtually all relevant studies are aggregative in nature and based on comparisons of rates (rates of crime on the one hand, rates of private weaponry on the other, both calculated over some geographical aggregate). This poses one final problem worth discussing in advance of the literature review itself, namely the problem of "connecting" private weaponry with crime when there is no direct evidence on the connection.

To illustrate with an example from the literature, one noted in Chapter Six, the South has a higher rate of private weapons ownership than any other U.S. region; also, the homicide rate is higher in the South than elsewhere, and the proportion of homicides committed with firearms is also higher (e.g., Newton and Zimring, 1969: 75). Thus, one might conclude (as Newton and Zimring do), that "more guns" equal "more gun crime." But how firm is this connection? First, the distinctiveness of the South in private weapons ownership is far sharper for shoulder weapons than for handguns; in Newton and Zimring's data, handgun ownership was actually higher in the West and Midwest than in the South; and yet most homicides involving firearms are committed with handguns, and this is just about as true in the South as in other regions. It seems rather tenuous to attribute homicide to the dispro-

portionate ownership of a class of weaponry that is seldom involved in homicide. Further, in the South as elsewhere, weapons ownership (of all types) is sharply higher in rural than in large urban areas, whereas criminal violence (in the South as elsewhere) is concentrated in the large cities. Again, it seems rather tenuous to link urban murders with the ownership of guns in small town and rural areas. But tenuous links of precisely these sorts are directly implied in the kinds of regional comparisons being discussed.

There is persuasive evidence in the literature that the Southern distinctiveness in homicidal violence results nearly exclusively from the higher level of impoverishment and generally lower socio-economic conditions that prevail in that region (Loftin and Hill, 1974). This is plausible since crime everywhere (more particularly, violent crime of the sort at issue here) is far higher among the economically marginal than among the stable middle class. The Southern distinctiveness in private weapons ownership, in contrast, is almost certainly a function of differential early socialization into gun use for sport and the readier accessibility in the South of areas where the sporting use of weapons is possible (see the previous chapter). To the extent that these two points are valid, then the correspondence of high weapons ownership and high criminal violence in the South relative to other regions is purely fortuitous and, in itself, says nothing about any possible causal relationship between private weaponry and crime.

#### I. Is Crime a Cause of Private Weaponry?

The role of crime and violence in spurring demand for private weaponry was considered in some detail in earlier chapters, and only

a brief summary of relevant findings is necessary here. All available studies suggest that about three-quarters of private arms are owned for sport, recreational, or collecting reasons; the remainder are owned for self-defense. At least some defensive weapons ownership, especially in rural, isolated areas, would be for defense against animals rather than other people; evidence from the DMI survey suggests that perhaps as much as half of the defensive uses of weapons are against animals as opposed to people. Proportionally, then, private weapons owned primarily or exclusively for self-defense against other humans probably amount to not more than 10-20% of the total private arms stock. It is, of course, possible (although not logically necessary) that many or most of this 10-20% are possessed as a reaction either to crime or the fear of crime.

There is considerable evidence that the criminally victimized are not any more likely than the nonvictimized to possess a private weapon (Wright and Marston, 1975; Williams and McGrath, 1976; Lizotte and Bordua, 1980). In the Seattle "permit to carry" application data analyzed by Northwood and associates (1978), only about 1 applicant in 5 cited prior victimization as a reason for wanting a permit. Going out to purchase a defensive firearm after one has been criminally victimized is apparently not a very common behavior.

Further, there is some evidence that fear of crime is also not directly linked to weapons ownership (Wright and Marston, 1975; Lizotte and Bordua, 1980). In the same vein, the time-series analysis by Clotfelter (1977) of the recent national trend in handgun sales showed that the violent crime rate was not a significant factor. In the

Seattle data, census tract violent crime rates were uncorrelated with permit-to-carry applications; in the Illinois county-level data, no county crime rate measure was related to legal weapons ownership for either males or minors (Bordua and Lizotte, 1979).

On the other hand, Bordua and Lizotte (1979) do find a significant correlation between county crime rates and legal weapons ownership among women across Illinois counties. And in their individual level survey data for the state, they find that violent crime in the county is the only significant predictor of gun ownership for defense. Interestingly, in this survey, direct criminal victimization was not related to defensive weapons ownership, and neither was the respondent's stated fear of crime. Thus, it is not the criminally victimized whose weapons ownership contributes to the crime rate effect in these data, but rather non-victims living in the high-crime counties; further, it is not those most fearful of crime who are disproportionate defensive weapons owners. In general, these findings are similar to those reported by Wright and Marston (1975) from national data on gun ownership in the large cities and their suburbs. One possible scenario to explain this pattern of results is that some people living in areas of higher-than-average criminality (but not those actually victimized) get worried about their readiness to deal with a criminal attack, arm themselves with a defensive weapon as a consequence, and then, because they are armed, fear crime less. The absence of an effect for fear of crime, that is, may reflect only that the initially most fearful arm themselves and then feel psychologically safer because of it.

Why are the criminally victimized themselves not more likely

to possess a gun? One possibility, perhaps remote, is that their guns are among the items taken in the victimization. In this connection, it is useful to recall the finding from Burr's (1977) analysis of private handguns in Florida, that about ten percent of the handguns ever disposed of by his respondents were lost through theft. Another possibility is that criminal victimization is concentrated among categories of people (for example, women) who have never been socialized to gun use, or among other categories (for example, the old) who doubt their ability to use a weapon efficaciously, or among other categories (for example, the poor) who are unable to afford the price. Still another possibility is that the criminally-victimized learn through direct, first-hand experience the futility of private weaponry as an effective crime deterrent, and thus do not bother to arm themselves, despite their victimization. Still other possible explanations could, of course, be suggested, but there is little or nothing in the published literature that would allow one to choose among them.

Thus, while there is at least some contrary evidence, the bulk of the available research suggests that crime, fear of crime, and related variables are in themselves not very important factors in most private weapons ownership. Most guns are owned for sport and recreation, and there is neither reason nor evidence to suggest crime as a factor in ownership of weapons of this type. At least some guns (and a substantial fraction of handguns, perhaps as many as 40-50%) are owned primarily for defense, and living in a high-crime area seems (at least in the one available study that differentiates between sport and defensive weapons) to be a significant factor in the ownership of

weapons of this type. There is no evidence showing that the criminally victimized are more likely to own a gun, however, so the dynamics of the "crime and defensive weapons" equation are rather more complex than simply "get robbed, then buy a gun."

## II. Is Private Weaponry a Cause of Crime?

"There was a domestic fight. A gun was there. And then somebody was dead. If you have described one, you have described them all."

This quotation is from a televised interview with the Chief of the Homicide Section of the Chicago Police Department, was first cited in Newton and Zimring (1969: 43), and has since been widely cited throughout the literature as an epigrammatic, but nonetheless accurate, account of the etiology of much criminal violence. The essentials of the underlying theory of criminal violence are these: Much interpersonal violence in the society is not the result of pre-meditated intentionality on the part of the perpetrator, but rather arises in disputes, altercations, barroom fights, disagreements and fights between spouses, and other relatively minor and trivial circumstances. Such disputes arise in either of two conditions: either a gun is present, or it is not. In the second condition, the parties dispute, then come to their senses, and except for the heightened interpersonal animosity, little harm is typically done. In the first condition, the parties dispute, blast away, and then come to their senses, but by then someone is injured or dead, and what would have otherwise been a minor dispute has been transformed, merely by the availability of a firearm, into an aggravated assault or homicide. In this view, then, the privately possessed firearm is an important

cause of criminal violence; it turns otherwise harmless disputes into violent criminal attacks.

Similar arguments are sometimes also made for robbery, rape, and a few other classes of crime. Here the theme is that firearms, especially handguns, give potential offenders the courage (and means) to do what they would otherwise not be capable of doing -- i.e., committing their crime. In the absence of firearms, offenders would lack the psychic strength to engage in criminally violent acts.

A third argument in the same vein is that firearms themselves catalyze violent or aggressive tendencies, or in other words, that the presence of a gun pushes a potentially violent or aggressive person past the threshold between wanting to respond violently and actually responding in that fashion.

Thus, for these and a few other reasons, it is often argued that guns are themselves a cause of violent crime, that in the absence of guns much of what is now violent crime would be qualitatively different and, indeed, essentially benign, and therefore, if there were to be fewer guns in private hands, then less criminal violence would be committed.

Initially, there would seem to be a certain logic to these points of view. Certainly, the presence of a firearm is a necessary (if not sufficient) condition for its use as an instrument of criminal violence; in other words, if there were no guns at all, then, certainly, no crimes could ever be committed with them. Given the numbers of guns already available, however, and the evident impossibility of removing anything more than some fraction of them from potential criminal

abuse, the more serious research question is whether some reduction in the incidence of private weaponry would be followed by some similar reduction in the incidence of criminal violence. Since the possibilities for experimental manipulation of the rates of private weapons ownership are limited or nonexistent, and further, since there have been few or no successful legislative efforts that have achieved this end (see Chapter 15, below), least of all recently, the only practical method with which to inquire about this issue is to see whether there is less violent crime in areas with fewer privately possessed weapons, and, of course, vice versa. But this design, in turn, is imperiled by the several inferential and methodological problems discussed in the opening section of this chapter. The implication, confirmed below, is that existing research is not definitive with respect to the question whether private weaponry is a cause of criminal violence.

As in many other areas of the literature, the first sustained empirical foray into these issues is due to Newton and Zimring (1969: Chapter 11). The chapter, "More Firearms -- More Firearms Violence," uses three approaches to assess the causal impact of private firearms on criminal violence. "All approaches," they say, "provide evidence that the arms buildup, if it is partly a response to increased violence, also has contributed to it" (1969: 69).

The first approach is a case study of arms and violence in Detroit. First, the data show (p. 70) a sharp increase in the number of handgun permits issued in Detroit from 1965 to 1969; in 1965, about 5,000 such permits were issued, and in 1968, nearly 18,000. (On the implications of this, see also Chapter 5, above.) The number of accidental

firearms fatalities also increased during this same period, from 10 such fatalities in 1965 to 32 in 1968. Thus, "firearms accident rates increased markedly during this period of surging urban armament" (1969: 70).

There are several problems with this conclusion. First, the data on "surging urban armament" are for handgun permits issued, and are thus only an indirect indicator of the trend in handguns actually possessed. (There is apparently no evidence on the number of people who actually acquire a handgun once they have acquired a handgun permit. Presumably, the percentage is large, but must be something less than 100%.) The data on fatal firearms accidents, however, are for all accidents reported irrespective of weapons type. Thus, there is apparently no way to discern whether the noted increase in fatal accidents is a rise in fatal handgun accidents, as their argument implies, or in accidents involving shoulder weapons.

A further problem is that the permit evidence is for the city of Detroit, whereas the data on accidental deaths are for the whole Wayne County area (which includes Detroit and ten other relatively large communities). Whether the increase in accidental deaths and the handgun buildup were both concentrated in the same place therefore cannot be discerned from these data.

A final point is that while the conclusion is given in terms of an increasing firearms accident rate, the data are the absolute numbers of accidents occurring and are not converted to a rate. Presumably, the appropriate rate would in this case be the rate of fatal firearms accidents per handgun-owning household. Unfortunately, no one knows for sure how

many Detroit households possessed a handgun in the early 1960's (Newton and Zimring do not report an estimate), but we can estimate the number on the basis of a few assumptions. The 1960 population of the city of Detroit (not the surrounding metropolitan area) was about 1,670,000 persons. In the same year, there were, on average, 3.33 persons per household, which suggests roughly 502,000 Detroit households in 1960. Table 5-5 shows that among large non-Southern cities, the proportion of households owning a handgun was .077 in 1959. Simple multiplication thus gives an estimated 38,700 handgun-owning households in Detroit in 1960.

Suppose now that the number increased by 2,000 per year in the years from 1961 to 1964, such that by 1964, it stood at 46,700. According to Newton and Zimring, an additional 5,000 were added in 1965. (We are here assuming one permit per household.) The total in 1965 therefore stands at 51,700, and the ten accidental firearms deaths reported for 1965 therefore represent a rate of  $10/51,700 =$  approximately 2 accidental firearms deaths per 10,000 handgun-owning households. By 1968, again according to Newton and Zimring, handgun-owning households were growing by about 18,000 a year. Although their graph makes it difficult to infer the precise numbers, let us assume that the 1966, 1967, and 1968 additions were 6,000, 12,000, and 18,000 respectively, consistent with the notion of a "surge." This brings the 1968 total to 87,700 handgun-owning households in 1968, which would, as an aside, still represent only 17.5% of all Detroit households, within the realm of plausibility. Under these assumptions, the firearms accidental death rate in 1968 would be  $32/87,700 =$  approximately 4 accidental firearms deaths per 10,000 handgun-owning households. This is very definitely an increase over the rate estimated for

1965; in fact, it is twice the 1965 rate, which is in some sense a "marked" increase. What these numbers show, and that Newton and Zimring's numbers do not show, is that in both years, something in excess of 99.9% of all handgun-owning households did not experience a fatal firearms accident. These data are thus consistent with an argument that "new" handgun procurers in Detroit in the 1965-1968 era were somewhat less careful with their weapons than "old" handgun owners tended to be, but that well over 99.9% of all handgun-owners -- "new" and "old" -- were sufficiently careful not to have been involved in a fatal firearms accident.

"The increase in handgun sales is also reflected in trends in firearms suicides" (1969: 71). Again, there is reason for caution. Between 1965 and 1968, the total number of suicides in Wayne County actually declined, from 318 to 305 (see their Figure 11-3, p. 72), this despite the "surging urban armament" available for self-destruction. On the other hand, the number of suicides committed with firearms (of all sorts) did increase from 84 to 113. Converted to rates using the figures estimated above, however, the 1965 rate is  $84/51,700$ , or about 16 per 10,000 handgun households, and the 1968 rate is  $113/87,700$ , or about 13 per 10,000 handgun households, or in other words, a slight decline. This suggests that the "new" handgun owners were actually somewhat less likely to kill themselves with their guns than "old" handgun owners had been.

"The most significant aftermath of the arms buildup in Detroit is its impact on crime" (1969: 72). A direct demonstration of this point would require one to show that the people applying for permits and actually purchasing handguns during the period were more likely to commit subsequent

crimes (of whatever sort) than the people who did not. The data, of course, contain no such direct demonstration: the subsequent criminality, if any, among the people applying for handgun permits between 1965 and 1968 is simply unknown. So the case that the "arms buildup" was somehow directly linked to an increase in crime is at best inferential.

Data on homicide and aggravated assaults (Figure 11-4, p. 73) show a modest increase in attacks not involving firearms between 1965 and 1968, and a very much sharper increase in attacks with guns. The number of attacks with a gun in 1968 is slightly more than twice the number in 1965. But on the other hand, according to our earlier calculations, the number of handgun-owning households also increased in the period, by about 70%. Expressed as a rate, the increase is substantially less dramatic. The same is true of the evidence on armed robbery (1969: 74). Thus, of the various pieces of evidence presented on violent crimes in Detroit, the only one that shows a sharp and alarming increase in the rate per handgun household is homicide with firearms (Figure 11-6, p. 74), which increased from 55 in 1965 to 279 in 1968. The corresponding rates are 11 and 32 per 10,000. The number of these homicides committed with "new" handguns is, of course, unknown.

For a variety of reasons, nothing of substance can be concluded from these data (or these kinds of data) about the role of private firearms ownership in causing criminal violence. There is no evidence anywhere that the "new" criminals and the "new" handgun owners were in fact the same people, or even that the former were drawn disproportionately from among the latter. As noted in the introduction to this chapter, it is at least possible that some or all of the "surge" in handgun permits was

a response to the increase in crime, not a cause of it, a theme which Newton and Zimring themselves argue. And certainly, other plausible explanations of the increase in crime may be adduced, explanations that have nothing to do directly with private handgun ownership -- for example the surge in black rage against their treatment by white society that accompanied the racial turmoil of 1967 and 1968. The conclusion, that the arms buildup in Detroit "contributed to increased violence," may well be correct, but it has not been demonstrated by these data.

Newton and Zimring's second approach to the issue involves comparisons between the proportional ownership of firearms and the percentage of gun use in homicide and aggravated assault across four U.S. regions (1969: 75). The impossibility of drawing a sound causal inference from such data has already been discussed.

The third approach involves comparisons across eight U.S. cities. (The investigators sought data on 14 cities, but useable data were acquired for only eight.) The comparison consists of proportions of crimes committed with guns over three categories of crime: homicide, robbery, and aggravated assault. The data show that cities with a high proportion of firearms involvement in any of the three crime types also have high proportions of firearms involvement in the other two types, with rank-order correlations ranging from .6 to .9. Unfortunately, there are no data in this comparison on city-by-city differences in private weapons ownership, and so the correlation between rates of gun ownership and the proportional involvement of guns in these crimes across the eight cities cannot be computed. In general,

cities showing the highest proportional gun involvement in crime are in the South and West (Atlanta, Houston, and St. Louis are the "top three" in all three crime types), regions where private weapons ownership is also disproportionately high. But clearly, there is nothing in these data that suggests a direct causal link between weapons ownership city-by-city and rates of criminal violence city-by-city or rates at which firearms are used in violent crime city-by-city. It is possible that the city differences in proportional weapons involvement in crime reflect local judicial, prosecutorial, or sentencing practices, not the (possible, but undemonstrated) differences in private weapons ownership.

In sum, the evidence assembled in the Newton-Zimring report is inconclusive on the issue whether private firearms are directly and causally linked to violent crime. To be sure, this hypothesis is consistent with the evidence, but neither confirmed nor denied by it. Truly definitive evidence, such as evidence on the subsequent criminality of "new" handgun purchasers of the era, simply does not exist. These points notwithstanding, the Newton-Zimring chapter is often cited in the ensuing literature as the proof that guns cause crime.<sup>3</sup>

Newton and Zimring are not the only investigators to have researched this question, but they are among the relatively few. "Although there has been much popular discussion, surprisingly little serious empirical research has studied directly the impact of levels of gun ownership on rates of violent crime" (Kleck, 1979: 887).

The subsequent research, as with Newton and Zimring, is also

consistently inconclusive on the issue. Two of the more commonly cited studies (Seitz, 1972; and Fisher, 1976) actually do not contain a direct measure of firearms ownership, although both claim to offer evidence that firearms ownership per se increases criminal violence (specifically, homicide).

Murray (1975) has examined the relationship between five measures of "firearms violence" (firearms robberies, fatal firearms accidents, aggravated assault with a firearm, and suicide and homicide by firearm) and proportional handgun ownership across the fifty states and concludes that "it seems quite unlikely that the relative availability of handguns plays a significant part in explaining why some states have higher rates of acts of violence associated with firearms than others" (1975: 91). However, this study does not contain state-by-state estimates of handgun ownership; rather, it is based on regional rates over four gross regions, with all states in the same region receiving the same "per cent owning a handgun" score, and so this is an extremely crude and therefore uninformative test of the hypothesis.

There are two time-series analyses in the literature claiming to show a positive association between homicide and gun ownership (Phillips and Votey, 1976; Kleck, 1979), even with certain other relevant variables controlled. Kleck concludes, "gun ownership, whether measured as total guns or handguns [per capita], has a significant positive effect on the homicide rate" (1979: 900); and in a later passage, "coefficients estimating the effect of the homicide rate on either total gun ownership or handgun ownership are in the predicted direction." Thus, Kleck claims to have found a reciprocal causal rela-

tionship between gun ownership and homicide: "crime is a cause of gun ownership just as gun ownership is a cause of crime" (1979: 908). But again there are some problems. For example, the effect on homicide for total guns (handguns and long guns combined) was somewhat stronger than the effect for handguns only. Since homicide is about four to five times more likely to be committed with a handgun than with a shoulder weapon, one would naturally expect the handgun variable to show the stronger effect. There are also some problems with the firearms measures (they are based on production and importation data; see Chapter Two, above), all amply acknowledged by Kleck (1979: 895-896). And finally, since all measures in this study are for the U.S. as a whole, there is no direct evidence to show that the gun increases and the homicide increases occurred in the same area(s) of the country. The argument that "crime causes guns" would, of course, not require that the gun buildup and the homicide buildup be concentrated in the same area, since, to cite an example, people in Peoria might well purchase a weapon as a reaction to crime in Chicago. But the weapons owned in Peoria could scarcely be the cause of criminal violence in Chicago, and so the reciprocal argument, that "guns cause crime," does require that the gun and crime buildups be concentrated in the same places.

Obviously, production and importation data for the nation as a whole cannot be used to estimate area-by-area variability in weapons possession. Thus, the only existing evidence on city-size and regional variations in the "domestic arms buildup" is that contained in the survey evidence analyzed above in Chapter Five. And that analysis,

although necessarily rather crude given the nature of the data available, does not suggest a very close correspondence between the crime and handgun buildups: the increasing proportional ownership of handguns was concentrated mainly in middle-sized cities with populations in the range of 10-250 thousand (i.e., in the Peorias), whereas the increase over the past decades in criminal violence has been concentrated mainly in the largest urban areas (i.e., the Chicagos).

In this vein, it is relevant to cite once again Bordua and Lizotte's (1979) analysis of crime and weapons ownership across Illinois counties. Their evidence "implies that where the rate of legal firearms ownership is high, the crime rate is low," and thus, "it is implausible to assume that legal firearms ownership increases crime" (p. 159). The explanation is apparently simple: in Illinois as elsewhere, gun ownership is predominantly rural, whereas violent crime is predominantly urban.

The most recent, sophisticated, and persuasive analysis of these topics is due to Cook (1979), who has estimated the relationship between "gun density" and various indicators of the robbery rate over 50 large American cities. As with prior researchers, Cook again has no direct measure of city-by-city variance in gun density, but he constructs an apparently acceptable proxy measure by using the proportion of suicides and homicides committed with firearms. To demonstrate the validity of this indicator, data from the 50 cities are aggregated over geographical region, and the ensuing estimates of regional gun density are compared to the estimates generated from the NORC General Social Surveys. The comparison, although not perfect, is reasonably close, and Cook rightly suggests that these gun density indicators might therefore have wide

applicability in other research situations.

Substantive findings are relatively straightforward: the indicator of gun density was unrelated to the overall robbery rate across fifty cities, but was significantly related to the fraction of robberies committed with guns (1979: Tables 6 and 7), and thus, to the gun-robbery rate. The indicator was also related to the rate of robbery homicides. The apparent interpretation is thus that guns do not "cause" robbery in the sense that they cause more robberies to be committed, but rather alter the mix of robbery types: where guns are readily available, robbers are more inclined to use them, and in areas where they are not, they are inclined to use other weapons (or no weapons) instead. A general decline in gun availability, in short, would probably not lessen the number of robberies that occur, but would increase the proportion committed with something other than a gun. Some possible effects of this "substitution" are discussed later, in Chapter Eleven. (As an aside, it can be noted that Cook's findings are inconsistent with the argument that many robbers would lack the psychic strength to commit their crimes in the absence of a gun, since over these fifty cities, the robbery rate is essentially unrelated to gun availability.)

In sum: There is some, but not much, evidence to suggest that at least some fraction of private weaponry is purchased as a reaction to crime; by far the largest share is purchased for entirely different reasons. There is little or no conclusive evidence to show that gun ownership among the larger population is, per se, an important cause of criminal violence. Most of the research designs employed in the literature would not allow for a decisive demonstration of such an effect, even if it did

exist; designs that would allow one to detect the effect usually require data that do not exist or would be prohibitively expensive to generate.

It is true by definition that gun crimes require guns, and it is true empirically that guns, mainly handguns, are involved in a very large share of criminally violent incidents. (In 1967, for example, firearms were involved in 63% of all U.S. homicides, 37% of all robberies, and 21% of all aggravated assaults [Newton and Zimring, 1969: 39], and more recent data show similar patterns [see Chapter Eight, below].) But it does not follow from any of this that reductions in the private ownership of weapons would be accompanied by similar reductions in the rates of violent crime, or, what amounts to the same thing, that private weapons ownership is itself a cause of violent crime.

It perhaps goes without saying that the "average" gun owner and the "average" criminal are worlds apart in background, social outlooks, and economic circumstances. The idea that common, ordinary citizens are somehow transformed into potential perpetrators of criminally violent acts once they have acquired a firearm seems far-fetched, most of all since there is substantial evidence that the "typical" gun owner is affluent, Protestant, and middle class (see Chapter Six, above).

Again, it is true by definition that everyone who commits a crime with a firearm has a firearm in his or her possession when the crime is committed, and in this sense, the gun is obviously a "cause" of the crime. But there is no good reason to suppose that persons intent on arming themselves for criminal purposes would not be able to do so even if the general availability of firearms to the larger

population were sharply restricted. Here it may be appropriate to recall the First Law of Economics, a law whose operation has been sharply in evidence in the case of Prohibition, marijuana and other drugs, prostitution, pornography, and a host of other banned activities and substances -- namely, that demand creates its own supply. There is no evidence anywhere to show that reducing the availability of firearms in general likewise reduces their availability to persons with criminal intent, or that persons with criminal intent would not be able to arm themselves under any set of general firearms restrictions.

On the other hand, it may be, and often is, argued that much criminal violence, especially homicide, does not result from criminal intent but rather evolves from impassioned disputes that become violent (or, better, lethally violent) just because the gun was there. This line of argument is sufficiently common and important to the issues of this volume that we have devoted a chapter exclusively to it; see Chapter Eleven, below.

A final theme to be considered here is that private weaponry contributes to the inherent lethality or dangerousness of the environment. Here, the idea is that private weaponry is a pool of risk; and with constant probabilities of harm across the pool, it follows that as the size of the pool increases, harm will also increase. But not enough is known about the characteristics of privately possessed weapons to decide whether this is a realistic depiction or not. Unloaded, a firearm is no more lethal than a can of peas. But it is not known just what proportion of private weaponry is kept loaded and ready for use. So far as we can tell, no one knows what proportion of weapons-

owning households even keep ammunition for the weapon in the home, or how many are kept in operating condition (e.g., with cylinder or magazine or action in place), or how many are kept in secure, locked places, or, for that matter, how many weapons-owning households contain people who would know how to fire the weapon even if they wanted to. One could, of course, make assumptions about all these issues, each more or less plausible, but there would still be no firm evidence on which to base a policy conclusion. And until there is some evidence on these points, the contribution of any additional private weapon to the overall lethality of the environment cannot be assessed.

### III. Does Private Weaponry Deter Crime?

The presumed deterrence effect of private firearms is often touted in anti-gun-control sources as an important argument against stricter weapons controls. What evidence is there that private firearms are an effective deterrent to crime? Or that they are not?

The argument that firearms are not an effective crime deterrent is typically made on the basis of two kinds of evidence: (i) that much crime occurs in situations or locations where the ownership of a gun by the victim would not, even in principle, deter the crime, and (ii) that the number of criminals actually shot in the process by intended victims is very low.

Concerning the first of these, little need be said. The burglary of an unoccupied residence, the most common situation of home burglary, is clearly not deterrable by any firearms kept in the home, since there is no one home to use them. Likewise, unless persons walk the streets armed (and some do, see below), then private weaponry is not

going to deter much or any street crime. But none of these obvious facts bear on the question whether private weapons are useful deterrents to crimes occurring in situations or areas where they would be potentially deterrable, which is the more important empirical issue.

It is also true that very few burglaries, robberies, or rapes are accompanied by the victim shooting the offender (Newton and Zimring, 1969: 62-65; Yeager *et al.*, 1976). Newton and Zimring note, for example, that over the period 1964 to 1968, roughly two burglaries in a thousand were foiled by the intended victim shooting at the burglar; thus, some 99.8% were not.<sup>4</sup> The figure for armed robbery is somewhat higher, but still low in absolute terms; their data suggest that about two percent of all robberies "result in the firearms injury or death of the robber" (1969: 63). Similar results in all cases are reported by Yeager and his associates.

Since about 90% of all home burglaries occur when no one is at home (Yeager *et al.*, 1976: 1), the presented evidence for home burglary is somewhat misleading. If two in a thousand of all burglaries are foiled by the victim's use of a firearm, and 900 in a thousand occur with no one home, then the actual rate for burglaries committed with a person in the home is comparable to that reported for home robbery -- roughly 2%. We may thus conclude that the risk to a home robber, or to a home burglar burglarizing an occupied residence, of being shot and wounded or killed by the intended victim is roughly .02.

This seems a relatively low risk in absolute terms and one might therefore question whether a risk of this magnitude ever prevents potential burglars or robbers from getting into the business. In-

terestingly enough, however, this magnitude of risk apparently exceeds the risk to a burglar of being apprehended, charged, prosecuted, convicted, and sentenced for the crime (Kleck, 1979b: 11-12). In 1976, "the overall risk of a burglar being arrested and convicted was only about 1.8% for any given burglary. If half . . . received a prison sentence, then the risk of imprisonment was 0.9%." Since there is reason, and some evidence (e.g., Tittle, 1969; Erlich, 1973), to suppose that the possibility of imprisonment, however slight, deters at least some robbery and burglary (in the sense that it discourages people from ever robbing or burglarizing), and since the possibility of being shot and wounded or killed appears to be on the same order of magnitude, then it is plausible that at least some potential robberies and burglaries never occur because the people who would otherwise commit them fear the possibility of being shot by their intended victims. (See also Cook, 1979.)

Concerning burglary, it is also often noted that the probability is higher that a burglar will steal a weapon than be frightened off or actually shot by one (e.g., Yeager, 1976: 1). This may be relevant information for the homeowner who is considering the purchase of a defensive weapon, in that it compares the various types of risks and benefits that such a purchase might pose; but the result itself says nothing about whether the weapon, once purchased, effectively deters any crime or not.

Both Newton and Zimring (1969) and Yeager (1976) note that a private firearm is also more likely to be involved in a firearms accident than to be used in the deterrence of a crime. (Other data on this point are reviewed later in this chapter.) But this too is rele-

vant only to the risks and benefits that might ensue if a gun is purchased and is not relevant to the issue of deterrence effects ~~per se~~.

Another interesting theme in the Yeager pamphlet is that "the probability of being robbed, raped, or assaulted is low enough to seriously call into question the need for Americans to keep loaded guns on their persons or in their homes" (1976: 1). (How many private firearms are kept loaded is, of course, unknown.) Actually, as it happens, the odds of being criminally victimized in any year are between 5 and 10 times higher than the odds of being victimized by a natural hazard of any sort (e.g., flood, earthquake, etc.) (Wright et al., 1979), but it is unlikely that one would want to argue that since the risk from natural hazards is so small, no protective measures against them need to be taken.

There is some evidence, reported by Yeager and noted elsewhere as well, that the use of a weapon against a robber is an effective deterrent in some cases. Robberies, that is, are less likely to be successful if the intended victim takes self-defensive measures (55%) than if not (85%) (Yeager et al., 1976; see also Cook, forthcoming). Thus, "use of a weapon for self-protection may be the most effective means of resisting a robbery" (Yeager, 1976: 1). On the other hand, the opportunity to use a weapon to defend against a robbery is rare, since most robbery occurs on the street with the victim unarmed, and it is also true that the death or injury of the victim is more likely if he or she resists than if not (Cook, 1980; forthcoming; see also Chapter Eleven, below).

So far as can be told, there is no evidence available on the deterrence of crimes against business that results from weapons kept

on the premises. One study, cited by Newton and Zimring (1969: 66), did show that roughly one small business in four has a gun for defense against crime on the premises.

The evidence from several studies on the relationship between gun ownership and victimization by crime was reviewed earlier in this chapter. In general, no demonstrable relationship exists. If weapons ownership were an effective crime deterrent, then, all else equal, one would expect less crime against armed than unarmed households, which the data do not show. But in this sense, weapons ownership would only function as a deterrent if the criminal knew in advance that the intended victim was armed, not a very likely possibility.

On the other hand, Kleck (1979b) has pointed out that while criminals may not know whether any specific household is armed, they might know that some areas of a state or city are more heavily armed than others, and avoid them accordingly. In this case, we would expect less crime against households located in neighborhoods where the rate of weapons ownership was known to be high. This, however, must remain a speculative possibility since no relevant data are known to exist.

Concerning the deterrence of aggravated assaults, the scanty evidence available suggests that assaults are less likely to be completed if the victim uses a weapon than if no protective measures are taken (Kleck, 1979b: 13; Yeager et al., 1976).

In general, such evidence as exists on crime deterrence by private weaponry does not support the argument that guns are useless as deterrents of crime. The evidence does make it quite plain that most crime occurs in circumstances where the victim would have little or no chance

to use a gun, even if one were possessed. Most violent crime (other than homicide) takes place away from the home, and thus, presumably, away from one's weapons; further, the most common type of home crime -- burglary -- typically occurs when the residence is unoccupied. On the other hand, in the relatively few cases where the opportunity to defend oneself with a gun is present, the evidence suggests that one is somewhat less likely to be successfully victimized if one is armed than if not.

At the same time, for the types of crimes in question (mainly, home burglary against occupied residences, home robberies, and aggravated assaults), the evidence also suggests that one is more likely to be injured or killed if one resists the offender in any way (whether with a weapon or with some other protective action) than if one merely capitulates. For crimes potentially deterrable by a private gun, then, the tradeoff in defending oneself with a gun is between a somewhat lower "completion" rate and a somewhat higher probability of suffering bodily harm.

It is also possible, of course, that the single most important deterrence effect of private weaponry could never be detected even in the largest and most sophisticated research effort -- namely, the generalized deterrence of crime that results from the high overall rate of firearms possession among U.S. households. In other words, there may well be vast numbers of potential rapists, burglars, robbers, assaulters, etc. "out there" in the general population who, nonetheless, never commit a crime precisely because they know many citizens are armed and fear the possibility of getting shot. As Newton and Zimring

have remarked, "it is certainly possible that the crime rate would be still higher were it not for firearms" (1969: 65). Obviously, there is no evidence that would allow one to examine this possibility.

If the real or potential deterrence effects of privately possessed weaponry are necessarily difficult to determine, the actual use of private weapons in self-defense is not. Indeed, two recent national surveys have explored this issue in some detail, and it is appropriate to conclude the present chapter with a review of the more relevant findings.

The two surveys are, first, the 1978 DMI survey commissioned by the National Rifle Association and noted in several previous chapters, and secondly, a survey conducted in the same year by Cambridge Reports, Inc. (Patrick Caddell's polling outfit), under commission to the Center for the Study and Prevention of Handgun Violence. Both surveys are focussed rather more directly on public opinion about gun control than on the uses of weapons in self-defense; a comparison of the public opinion results is contained in Chapter 13, below.<sup>5</sup> But both also have at least some information on the uses to which private weapons are put. Most of Caddell's questions along these lines focus on handgun accidents and on respondents' experiences with handgun threats or attacks. DMI's questions, in contrast, focus heavily on the uses of weapons by respondents for their own self-defense.

Table 7-1 shows the relevant question sequence and marginal results from the Caddell survey. Consistent with other studies (see Chapter Two, above), 24% of Caddell's respondents say they possess a handgun, 17% (of the total, or 71% of the handgun owners only) say

TABLE 7-1

Data on Weapons Experience and Use from the Caddell Survey

[IF "YES" TO THE HANDGUN OWNERSHIP QUESTION]

Do you ever carry that handgun or pistol outside of the house with you for protection or not?

YES	7%
NOT SURE	4
NO	15
DON'T OWN HANDGUN	77

Do you own a handgun for protection or self-defense purposes? [IF YES] Have you ever had to use it?

YES, TO THREATEN	1%
YES, AND I FIRED	2
YES, BUT NEVER USED IT	14
NO TO FIRST QUESTION	83

[IF "YES" TO ABOVE]

Where did you use it?

AT HOME	1%
AT BUSINESS	--
ON THE STREET	--
PUBLIC FACILITIES	1
OTHER PLACES	1
INAPPLICABLE	97

Have you ever been involved in a handgun accident? [IF YES] Were you injured or not?

YES, NOT INJURED	2%
YES, INJURED	2
NO, NEVER	96

Has anyone in your family ever been involved in a handgun accident? [IF YES] Were they injured or not?

YES, NOT INJURED	2%
YES, INJURED	3
YES, KILLED	5
NO, NEVER	89

Table 7-1 (Continued)

Has a close friend ever been involved in a handgun accident? [IF YES] Were they injured or not?

YES, NOT INJURED	2%
YES, INJURED	6
YES, KILLED	7
NO, NEVER	85

Have you ever been attacked or threatened with a handgun? [IF YES] Were you injured or not?

YES, NOT INJURED	9%
YES, INJURED	2
NO, NEVER	89

Has anyone in your family, beside yourself, ever been attacked or threatened with a handgun? [IF YES] Were they injured or not?

YES, NOT INJURED	7%
YES, INJURED	2
YES, KILLED	3
NO, NEVER	88

Has a close personal friend ever been attacked or threatened with a handgun? [IF YES] Were they injured or not?

YES, NOT INJURED	9%
YES, INJURED	6
YES, KILLED	4
NO, NEVER	82

they own a handgun "for protection or self-defense," and 7% (of the total, or 29% of the handgun owners only) say that they carry their handgun with them for protection outside the home.<sup>6</sup> Likewise, 3% of the total sample (or 13% of the handguns owners only) have "had to use" their weapon in self-defense: two-thirds of those who have "had to use" their weapon in this manner actually fired it. It thus appears that 2% of the total adult population of the country has at some time in their lives actually fired a handgun in self-defense.<sup>7</sup>

The text of Caddell's report tends to downplay these self-defensive uses of weapons. "Almost half the time, the handgun was purchased in order to provide protection, although only 3% of the population has actually used a handgun for self-defense." And later, "since defense is a primary reason behind the ownership of many guns, it is interesting to see whether owners have actually used their handguns for protection. As the table shows, most have not." The theme here seems to be that, while many people buy their guns for self-protection, they are seldom used for that purpose, a point that might be used to undercut self-defense as a compelling reason to own a gun.

The data on accidents, threats, and attacks are featured more prominently. According to his data, about 4% of the respondents have been involved in a handgun accident, half of the incidents resulting in personal injury. Likewise, 10% report that a family member has been involved in such an accident and 15% report a similar experience for a "close personal friend." Caddell's data suggest that 5% of the adults in the United States have had a family member killed in a handgun accident, and 7% have had a close friend killed in the same manner.<sup>8</sup>

The evidence on handgun threats and attacks is similar: 11% of the respondents say they have personally experienced such an attack, 13% report such an attack for a member of the family other than themselves, and 19% report such an attack on a close personal friend.<sup>9</sup> Roughly half of all these attacks are said to have resulted in personal injury or death. Additional analysis reveals that both handgun accidents and handgun threats and attacks are more common among households possessing a handgun than among households who do not. "What these numbers say is this: handgun violence touches a lot of people in this country." Certainly, these data show that a handgun is at least as likely to be involved in an accident as it is to be fired in self-defense, consistent with the point made by Yeager and associates.

Table 7-2 presents the DMI data on weapons experience and uses. None of the DMI questions are precisely comparable to any of Caddell's, so direct comparisons between results are hazardous. Also, all of Caddell's questions ask about handguns, whereas the DMI items deal with all guns irrespective of type. A further important difference is that Caddell's questions on self-defensive weapons uses ask for information only about the respondent, whereas the corresponding DMI questions ask about both the respondent and the respondent's family members. These differences in question format are of some interest in themselves: Restricting the questions to handguns only and to respondents only will necessarily show less defensive weapons use than expanding the questions to include all guns and all family members.

According to the DMI data, 15% of all registered voters (or their family members) have "used a gun" for self-defense or other protective

TABLE 7-2

Data on Weapons Experience and Use from the DMI Surveys

FACE-TO-FACE SURVEY

Have you yourself or a member of your household ever used a gun, even if it wasn't fired, for self-protection or for protection of property at home, at work, or elsewhere (except in military service or police work)?

YES	15%
NO	85

[IF YES TO THE ABOVE QUESTION]

Was the incident important enough to report to the police?

YES	31%
NO	66
DON'T KNOW	3

Was the gun fired in the incident?

YES	40%
NO	56
DON'T KNOW	5

Was anyone killed or injured?

YES	9%
NO	86
DON'T KNOW	6

[ALL RESPONDENTS]

Has anyone else you know personally ever used a gun, even if it wasn't fired, for self-protection. . . (AS ABOVE)

YES	27%
NO	73

[IF YES TO THE ABOVE]

Was the incident important enough to be reported to the police?

YES	52%
NO	47
DON'T KNOW	2

Table 7-2 (Continued)

Was the gun fired in the incident?

YES	47%
NO	52
DON'T KNOW	1

Was anyone killed or injured?

YES	24%
NO	74
DON'T KNOW	1

TELEPHONE SURVEY

Have you yourself or a member of your household ever used a gun, even if it wasn't fired, for self-protection. . . (AS ABOVE)? [IF YES] Was this to protect against an animal or a person?

YES, AN ANIMAL	5%
YES, A PERSON	5
YES, BOTH	2
NO	88

And, have you, yourself, ever been in a situation where you needed a gun to protect yourself or your family or property but there was no gun available? [IF YES] Was this to protect against an animal or a person?

YES, AN ANIMAL	1%
YES, A PERSON	8
YES, BOTH	1
NO	90

reasons at some point in their lives; in the DMI telephone poll, the corresponding percentage for an identical question was 12%. The telephone survey shows that roughly half of these defensive weapons uses are to protect against a person. Of the 15% reporting a defensive weapons use in the face-to-face survey, 31% say the incident was important enough to report to the police. The weapon was actually fired, it appears, in 40% of the incidents; 9% of the incidents apparently resulted in injury or death (presumably, to the "other guy"). A parallel series of questions about personal friends produces similar, but uniformly higher, numbers on all items.

The DMI face-to-face survey thus suggests that 6% of all registered voters or their families ( $.40 \times .15 = .06$ ) have, at some point in their lives, fired a weapon of some sort in self-defense; this finding is thus not inconsistent with Caddell's finding that 2% of all U.S. adults have themselves fired a handgun in self-defense. There is, in short, no serious disparity between the two findings.

DMI's telephone poll reveals another finding that figures prominently in their report; 10% of the DMI respondents say they can recall a situation where they "needed a gun but no gun was available." (Caddell has no comparable item with which this result might be compared.) Most of these incidents, it appears, involved a person rather than an animal.

In contrast to Caddell, DMI's report strongly emphasizes the frequency with which guns are used in self-defense. First, from the Executive Summary: "13 million [registered voters] live in households in which a family member has had to use a gun in defense of self, family, or property from another person. Further, 9.5 million registered voters

can recall a situation in which they needed a gun for protection when none was available. . . . With this many voters having direct experience with guns as instruments of self-defense, it is no surprise that 83% feel 'most people who have guns in their homes feel safer because of it.'" All these themes are emphasized again in the body of the report. "Seven out of every one hundred respondents (or 6.6 million Americans) indicated that they or a member of their family had used a gun at some time to protect self or property against another person. Additionally, nine out of every hundred (8.5 million) indicated that they themselves had been in a situation where they needed a gun. . . but none was available to them." The next paragraph of the report emphasizes that "these data may understate" the true use of guns in self-defense "because people may fail to recall episodes in the 'distant past' where they used, or desperately needed but did not have, a gun." Then, bringing the argument to its most pointed conclusion (and incidentally, its most pointed contrast with the Caddell report): "It is sometimes asserted that firearms in general, and handguns in particular, have limited use for defensive purposes. (...) The surveys found that almost 14% of the American electorate, or about 13 million Americans, could recall a time when they or another member of their household had used a gun for protection. . . . Of those who remember such an experience, 40% indicated that the gun was fired. . . , 31% said that the incident was important enough to report to the police, and 9% responded that someone was killed or injured in the incident. It is clear that guns are frequently used for protection. In a substantial minority of those remembered instances of gun use, it was necessary to fire the weapon, although

few such incidents resulted in injury or death."

As is evident from the passages quoted above, DMI's report and conclusions depend heavily on rhetorical formulations of key results. Note first the persistent translation of percentages into raw numbers; via this device, a smallish percentage is transformed into, literally, millions and millions of people. A second prominent device is the occasional insertion of a word or a phrase to the actual question wording when the result is being discussed. Respondents were asked, for example, whether they could recall a situation "where you needed a gun. . . but there was no gun available." In the text, this becomes (at one point) "desperately needed but did not have a gun." Or consider the sentence, "in a substantial minority of those instances. . . , it was necessary to fire the weapon, although few such incidents resulted in injury or death." DMI's question, of course, asks only whether the weapon was fired and says nothing about whether it was necessary to fire it; these are, quite obviously, different things.

Despite the differences in emphasis and conclusions, both surveys touch enough common ground to sustain at least a few conclusions. First, as shown in all other studies, some 20-25% of all U.S. households possess a handgun, and about twice that percentage possess a weapon of some sort (see also Chapter Two, above). Secondly, many (although certainly not all) handguns are owned for purposes of protection or self-defense; approximately 40% of the handgun owners in both surveys cite self-defense or protection as the primary reason they possess the weapon, and some additional percentage cite this as a secondary reason (see also Chapters Three and Five, above). Third, at least some of the

weapons that are owned for self-defense are actually used for this purpose at some point: perhaps as many as 15% of all registered voters or their families have "used" a gun for self-defense, a rather lower percentage (7% in the Caddell survey) carry their weapons with them for defense outside the home, a lower percentage still say that they, personally have "had to use" their handguns for self-defense (which is clearly a more restrictive phrasing than simply "used"), and the proportion of U.S. adults that have actually fired a weapon in self-defense is somewhere in the range of 2% to 6%. Fourth, the incidence of firearms accidents and handgun threats and attacks is at least as prevalent as, and probably somewhat more prevalent than, the incidence of weapons uses for self-defense; people are fired at, in other words, at least as often as they fire.

In sum: It is often said that "ownership of handguns by private citizens for self-protection against crime appears to provide more of a psychological belief in safety than actual deterrence to criminal behavior" (Yeager et al., 1976: 35). This conclusion is misleading in several related ways:

(i) The vast bulk of private weaponry is not owned for "self-protection" but for other reasons.

(ii) Of the weaponry possessed specifically and primarily for defense (perhaps 25% of so of the total armament), some share is not for "self-protection against crime" but for protection against animals; evidence from DMI intimates that this factor might account for as much as half the total defensive ownership.

(iii) In this day and age, a "psychological belief in safety"

probably ought not be dismissed as a trivial benefit. If people feel safer because they own a gun, and in turn lead happier lives because they feel safer and more secure, then their guns make a direct and nontrivial contribution to their overall quality of life.

(iv) That private weapons are inefficacious crime deterrents has not been established directly in any source. In the case of crimes occurring in circumstances where they are potentially deterable by a private gun, the evidence suggests, in contrast, at least some modest deterrent effects. (To be sure, most crimes do occur in what might be referred to as nondeterrable situations.)

(v) In owning a gun for protection (or any other reason), a homeowner runs some risk that the gun will be stolen or involved in an accident. This speaks to the potential costs of such a purchase, but not to the potential benefits, either psychological or objective.

(vi) At least some of the people who own guns for self-defense actually use them for that purpose; the precise percentage is, of course, very difficult to determine, as are the ensuing effects on crime and violence in the society as a whole. It is certainly possible that the high rates of crime and violence that predominate in the United States are due primarily to the widespread ownership of guns. But it is also possible that the widespread ownership of guns keeps the rates of crime and violence well below what they might otherwise be. At present, there is no good evidence anywhere that would allow one to choose decisively between these possibilities.

Footnotes

<sup>1</sup>The high rate of weapons possession by households in these nations is, of course, a reflection of their policies regarding an armed reserve militia. See Bruce-Biggs (1976) for details and some interesting commentary on international gun comparisons in general.

<sup>2</sup>That virtually all gun-owning households are not involved in a gun incident in any typical year, of course, is not proof that guns are not a cause of crime. Anti-control advocates often argue the contrary, namely, that private weaponry cannot be a serious cause of criminal violence because the vast bulk of privately owned weapons are never involved in a violent or criminal incident. But by the same token, the vast bulk of all cigarette smokers die of causes other than cancer of the lung. From this it cannot be inferred that smoking is not a cause of lung cancer. While most smokers die from other causes, the odds of dying from lung cancer are several times higher if one smokes than if not. The analogue to the case of private weapons would thus require one to show that, even though most (nearly all) guns are never involved in a violent or criminal incident, the odds of perpetrating such an incident are higher among persons possessing a gun than among those who do not.

<sup>3</sup>See, e.g., Alviani and Drake (1975: 1): ". . . the data on crime, accidents, and suicides involving handguns shows close correlations between levels of ownership and the rate of each type of incident." As

further evidence, these investigators also cite the regional comparisons discussed in the text. A very similar treatment of the Newton-Zimring results is found in a well-known publication of the Massachusetts Council on Crime and Correction, A Shooting Gallery Called America, especially pp. 1-2.

<sup>4</sup>The figure, 2 per thousand, is a comparison between the number of burglars shot or wounded in the course of the crime and the total number of burglaries reported to the police. Burglars who were shot at but got away and were never subsequently apprehended would presumably not show up in these data as deterred crimes, and so the calculated figure may be rather too low. Also, it is possible that many burglars are frightened off by the homeowner brandishing a weapon; these, presumably, should also count as deterred crimes but would not show up as such in these data. (All these points also apply to the calculated deterrence rate for robbery, as discussed below in the text.)

<sup>5</sup>Actually, DMI conducted two surveys for the NRA in 1978 -- one in person and one over the telephone. Both are surveys of registered voters only; in contrast, the Caddell survey is of all U.S. adults, whether registered to vote or not. Technical details on both surveys, and comparisons of their sample demographics, are presented in Chapter 13.

<sup>6</sup>Note that Caddell's figure -- 71% of handgun owners owning the gun for protection or self-defense -- is much higher than the roughly 40%

figure suggested in other sources (see Chapter Five, above). This is because the 40% estimate is based on a question asking for the most important reason one owns a handgun, whereas Caddell's question would also pick up self-defense as a secondary or tertiary ownership reason.

<sup>7</sup>It is impossible to determine from Caddell's report just how much of this 2% is comprised, say, of veterans who have used sidearms in combat situations or of policemen or other security personnel using handguns in the context of their jobs. Presumably, these kinds of experiences would contribute a sizable fraction of the total. Recall that according to the data shown in Chapter Five, somewhere between 8% and 13% of all privately-owned handguns are owned primarily for employment-related reasons.

<sup>8</sup>Caddell's figures for death from handgun accident and attack seem on the surface to be inordinately high. They are probably inflated to some extent by what is known in the survey literature as the "good respondent" syndrome -- i.e., by the tendency of small fractions of the population to provide the answer that they think the investigator wishes to hear. It must also be kept in mind, however, that the frame of reference provided by the question is very broad, i.e., "Has anyone in your family ever been involved...." In this case, "ever" could conceivably stretch back two or three generations (to, for example, grandparents and great-grandparents), and "anyone in your family" could include not just persons in the immediate family, but also aunts, uncles, cousins, and various other extended family members. Keeping these frames

of reference in mind, the numbers from the Caddell survey are more plausible. Rephrasing slightly, imagine a single individual killed in a handgun accident or attack. That person would have two parents, four grandparents, unknown numbers of aunts, uncles, and cousins, and possibly some children who could then accurately report that a family member had, indeed, been killed in a handgun mishap. Note further that if the person were married, all the equivalent in-laws could, again accurately, make the same report.

<sup>9</sup>The NORC General Social Surveys have periodically asked, "Have you ever been threatened with a gun, or shot at?" The percentage responding "yes" varies between 16% and 20%, or somewhat higher than Caddell's 11% (for respondents only). Caddell's question, however, stipulates a handgun threat or attack, whereas the NORC item says nothing about the kind of gun, which would account for the difference in observed results.

PART II: CRIME AND VIOLENCE

CHAPTER EIGHT

HOW MUCH CRIME? HOW MUCH VIOLENCE?

In this chapter we examine the extent to which violence and violent crime feature in American life. Since there is no single publication which documents the amount and character of death and injury due to violent or criminal means, we draw on a variety of sources to develop a comprehensive picture of this phenomena.

The definition of "violence" and "violent crime" has obvious implications for the amount of such activity. Broadly conceived, violence consists of all circumstances in which human life is threatened or extinguished by psychological or physical means. This definition can include a wide range of incidents such as abuse and neglect within the family, industrial and workplace hazards and the psychological consequences from fear of crime. However, more commonly, violence in American is defined by the legal criminal code by the violent crime categories of murder, rape, aggravated assault and robbery. In this chapter, we focus our attention on the incidence of violence as defined by such criminal acts, with the recognition that this focus excludes some areas of "violence".

One of the working definitions of "violent crime" used by law enforcement agencies is the FBI's Uniform Crime Reports (UCR) which annually documents the amount of reported "violent crime" in four Index crime categories: murder and non-negligent manslaughter, forcible rape, robbery, and aggravated assault. A slightly broader interpretation of "violent crime" is used in the Law Enforcement Assistance Administration's

(LEAA) victimization surveys, wherein "crimes against persons" include simple and aggravated assault, statutory and forcible rape, as well as robbery.

Apart from the UCR's selective definition of "violent crime", its Index crime rates represent only a fraction of the actual levels of violent crime. As we discuss more fully below, the UCR Index crimes are those that are reported to or detected by the police and which the police record and report to the FBI. The LEAA victim surveys reveal that the amount of "violent crime" that is unreported by victims varies from 25 to 50% depending on the type of crime; Black's (1970) analysis of police departmental practices in recording citizen complaints reveals that a similar proportion of incidents do not become officially recorded by the police.

In the analysis which follows, we present the extent of "violent crime" in the U.S. with a conscious concern that (1) it is restrictive to the definitions of violent crime used by law enforcement agencies, (2) it is limited to crimes that identify individual culpability, (3) it underrepresents the actual amount of violent crime that is experienced and (4) it does not account for the subjective states of fear experience from all types of crime.

The annual incidence of death and injury by violent means is even more difficult to define and estimate. One could include, for example, deaths from transportation or recreational accidents to injuries sustained from the inadvertant use of a knife in fishing. What constitutes death or injury "by violent means"? For our purposes, we examine (1) those accidents that involve the use of weapons, (2) self-inflicted death and injury, i.e., suicide or attempted suicide, (3) police homicides, and (4) death

and injury incurred by police officers.

While our working definition of "violent crime" and death and injury by "violent means" may not cover all forms of violence experienced by millions of Americans in their day-to-day lives, it does provide a common conception of violence for which data is available for trend descriptions. In the following analysis, we examine the longitudinal trends in violent crime as documented by the UCR. The purpose is to assess the changes over time in the rates of these incidents and the types of weapons used. We then augment this analysis by drawing on LEAA victimization survey data to estimate the actual incidence of certain forms of violent crime. Data from the National Center for Health Statistics is introduced to show the extent of death and injury incurred by violent means, in this case, by the accidental or intentional use of weapons or toxic substances. In addition, the longitudinal trends in police homicide and police officers assaulted or killed is examined. Last, we try to provide a rough estimate of the annual incidence of death and injury from both criminal and non-criminal intent, specifically focusing on the frequency of incidents and accidents where firearms were involved.

#### Longitudinal Trends in Violent Crime -- UCR Statistics

The FBI's UCR is an annual compilation of crimes reported to the police (the 7 Index crimes) and arrest rates (for Index and non-Index offenses). Begun in 1930, these criminal statistics are the major data source for law enforcement agencies and criminological researchers in depicting the prevalence and causes of crime. The limitations of the UCR are well known; for our purposes we highlight these problems as they bear on the

production of Index violent crime statistics.

Citizen Reporting: Citizen discretion in reporting crimes and police response in recording crimes contribute to the production of the UCR "crime rate" that is far below the actual level of crime. Wesley Skogan's (1974, 1976) analysis of citizen reporting practices shows that the primary determinant is the seriousness of the offense. Using LEAA victim data, Skogan finds that the important factors in citizen reporting of crimes are the amount of financial loss, whether force was used, whether a weapon was used, the extent of injury sustained, and whether the assailant was a stranger.

Police Recording: Police underreporting of incidents stems from two major sources: the beat patrolmen who observe and respond to complaints and the political and organizational filters of police departments in official counts of incidents reported to the UCR. Donald Black's (1970) analysis of police/complainant interaction patterns in three cities shows that police are more apt to make an official report if (1) the incident is more serious legally (i.e., a felony), (2) the complainant prefers that an official report be made, (3) the alleged assailant is a stranger, and (4) the complainant is more deferential to the officer. Official department counts of crimes can be influenced by the political mileaux surrounding the department. Police departments may be under pressure to "keep the crime rate low"; yet, changes in administration may produce a temporary "rise" in the crime rates caused by the more energetic efforts in making arrests. Flurries in crime recording and its subsequent decline as a new political administration settles into office were documented by the President's Crime

Commission (1967:22-25). Departments which are more honest or conscientious in their reporting practices can suffer the consequences of citizen attitudes of lower "police effectiveness" (Skogan, 1976b).

Crime Classification: There is much discretion by police departments in official reporting to the FBI once an incident has been recorded. Offenses reported to the police may be "downgraded" to a less serious offense or ignored. Crime categories of aggravated assault and simple assault are based on an officer's subjective assessment of the amount of injury sustained by the victim. But in addition to how an incident is classified by the police, the UCR offense classification scheme can also be misleading and difficult to interpret. Specifically, UCR classification of crimes (1) utilizes broad legal labels that mask the variety of offenses within categories, (2) often includes attempted and completed incidents, (3) does not distinguish multiple events, (4) does not indicate the seriousness of the offense (e.g., amounts of property loss and types of violence and personal harm involved), and (5) allows for numerous types of classification errors (Hindelang et al, 1978: 25).

The implications of these problems in the UCR for purposes of understanding the longitudinal trends in the level and character of violent crime are (1) UCR crime rates may contain proportionately higher rates of serious crimes or crimes involving weapons, particularly firearms, since these tend to be reported more often; (2) reporting practices among police departments to the UCR vary to such an extent that inter-city differences or rates among different demographic groups may be misleading, (3) the consequences of violent crimes for victims (e.g., level of injury sustained)

cannot be ascertained from the crime classification, (4) assessing the longitudinal trends in violent crime rates may be problematic with changes in political administrations, professionalism and resources of departments, and changes in incident record-keeping and reporting practices to the FBI, and (5) crime categories may mask similarities in the violent crime activity itself, but are differentiated with respect to the outcome of criminal violence.

These problems with using the UCR data are particularly relevant to analyses of the correlates of crime and inter-city or regional comparisons of the "crime rate". These crime statistics can be used with some confidence, however, in judging broad national trends in crime rates if one bears in mind that the "crime rate" is a mixture of actual levels of crime, police ability to detect and respond to crime, and departmental accuracy in reporting incidents. The following review of the UCR longitudinal trends (1960-1978) in violent crime presents a general picture of the rates of such crimes and patterns of weapon use.<sup>1</sup>

Criminal Homicide: From 1960 to 1978, the homicide rate has almost doubled, rising from 5 to 9 per 100,000 individuals (Table 8-1). The homicide rate actually peaked in 1974 at 9.8 per 100,000, then declined and stabilized to 9 per 100,000 from 1975-1978. The use of weapons in homicide has changed over the two decades, with the use of firearms increasing steadily from 53% in 1960, peaking in 1974 at 68%, and declining slightly to 63% in 1978. Handguns are the preferred weapon, accounting for about half of the homicides, and over 75% of homicides committed with firearms. Over time, handguns have become more instrumental in homicide, increasing from 44% in 1966, to a peak in 1972-1974 at 54%, and then a

**CONTINUED**

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TABLE 8-1

## MURDER AND NON-NEGLIGENT MANSLAUGHTER TRENDS FROM THE UCR

Year	Number	rate/ 100,000	% Firearms			Total Firearms	% Cutting/ Stabbing	% Other Weapons	% Personal Weapons	Clearance Rate
			Handgun	Rifle	Shotgun					
1961	8,800	4.8	*	*	*	53%	24	12	11	93%
1965	9,960	5.1	*	*	*	57%	23	10	10	90%
1966	11,040	5.6	44%	7	9	60	23	8	9	89%
1970	16,000	7.9	52%	5	8	65	19	8	8	86%
1975	20,510	9.6	51%	6	9	66	18	8	9	78%
1978	19,555	9.0	49%	6	8	63	19	12	6	76%

\*No data or breakdown available

SOURCE: Data for frequency and rates/100,000 for 1960-1975 are from UCR, 1975, p. 49. Frequency and rates/100,000 for subsequent years from individual UCR's for each year. Note that there are discrepancies between the yearly UCR figures and those shown in the UCR 1975 longitudinal trends for 1960-1975. Weapon use and clearance rates are from the individual yearly UCR reports.

decline to 49% in 1978. The use of rifles and shotguns in homicides has remained about the same since 1966. The overall increase in firearms use corresponds to decreases in other types of weapons used.

Often depicted as a "crime of passion" and distinguished from other crimes as having different criminal motivations, homicide may be more accurately portrayed as the fatal result of other types of violent crimes. Richard Block's (1977) longitudinal analysis of homicide, robbery, and aggravated assault shows that violent crimes which end in death (and thus labelled "criminal homicide") are very similar to other forms of criminal violence in which injury occurred (e.g., a robbery with injury or an aggravated assault). Differences in the level of fatal and non-fatal violent crime may result from choice of weapons used and in the characteristics of the crime which lead to police notification. One can clearly see the implications of the increasing rate at which more lethal weapons (i.e., firearms) are employed in other violent crimes (see Tables 8-3 and 8-4) for the increase in the homicide rate. In addition to Block's analysis, these trends have been observed in longitudinal studies of violent crime in Atlanta (Munford et al, 1976) and Cleveland (Hirsch et al, 1973).

Rape: The incidence of reported forcible rape and attempted rape has increased three-fold from 1960 to 1978. Patterns of forcible rape are far more subject to non-reporting by the victim and to police discretion in recording incidents and making arrests. Illustrative of the role of the police and the position of the victim in reporting rape is the FBI's 1966 special survey on patterns of forcible rape. From that survey, the FBI concluded that "nearly 20% of the incidents of reported forcible rape were

TABLE 8-2  
FORCIBLE RAPE TRENDS FROM THE UCR

<u>Year</u>	<u>Number</u>	<u>rate/100,000</u>	<u>% Rape by Force</u>	<u>% Rape Attempted</u>	<u>Clearance Rate</u>
1960	17,190	9.6	*	*	73%
1965	23,410	12.1	66%	34	64%
1970	37,990	18.7	71%	29	56%
1975	56,090	26.3	74%	26	51%
1978	67,130	30.8	76%	24	50%

\*No data available

SOURCE: Data for frequency and rates/100,000 for 1960-1975 are from UCR, 1975, p. 49. Frequency and rates for subsequent years from individual UCR's for each year. Note that there are discrepancies between the yearly UCR figures and those shown in the UCR 1975 longitudinal trends for 1960-1975. Rates/100,000 should be doubled, given that women are the targets of rapists.

determined to be unfounded" (UCR, 1966). Clearly, the extent to which reported rape may be "unfounded" speaks to the problems of the victim pressing charges against the rape offender (more often an acquaintance than a stranger) and the degradation of the female rape victim by press accounts, police and court handling and community reaction (Brownmiller, 1975; Smart and Smart, 1978). Of particular note for longitudinal trends is the shift in proportions of reported attempted vs. completed rapes, with the completed forcible rape rate increasing from two-thirds to about three-fourths of all reported rapes.

Robbery: The reported incidence of personal and commercial robbery increased about four-fold from 1960 to 1978. With the exception of a special survey conducted in 1967 on the use of types of weapons in robbery, the UCR did not begin reporting weapon use until 1974. Beginning in 1963 and up until 1974, robberies were divided into two groups: armed and strong-armed. From 1963 to 1973, there was an increase in reported armed robberies from 59% to 66%. A special UCR survey of cities conducted in 1967 revealed that of all robberies, 36% were committed with firearms, 14% with a knife or cutting instrument, and 8% with blunt objects.

Although the data for the type of weapon used in this trend analysis are discontinuous (from 1968 to 1974), one may infer that the gradual increase in armed robberies corresponds to an increase in the use of firearms in robberies. In 1967, firearms were used in 36% of reported robberies, while in 1975, 45% of reported robberies involved firearms. From 1975 to 1978, the use of firearms declined somewhat to 41%, with an increase in the use of strong-armed tactics. The use of knives or other sharp instruments and blunt weapons remained constant from 1967 to 1978.

TABLE 8-3  
ROBBERY TRENDS FROM THE UCR

Year	Number	rate/ 100,000	% Armed			% Strong Armed	Clearance Rate
			Firearm	Knife	Other Blunt		
1960	107,840	60.1	*	*	*	*	39%
1963	116,470	61.8		59%		41	39%
1965	138,690	71.7		58%		42	38%
1967	202,910	102.8	36%	14	8	42	30%
1970	349,860	172.1		63%		37	29%
1975	464,970	218.2	45%	12	8	35	27%
1978	417,040	191.3	41%	13	9	37	26%

\*No data available

SOURCE: Data for frequency and rates/100,000 for 1960-1975 are from UCR 1975, p. 49. Frequency and rates/100,000 for subsequent years are from individual UCR's for each year. Note that there are discrepancies between the year UCR figures and those shown in the UCR 1975 longitudinal trends for 1960-1975. Weapon use and clearance rates are from the individual yearly UCR reports.

Aggravated Assault: Aggravated assault, by definition, involves the use of weapons or threat use of use of weapons with the intention of inflicting injury. The rate of reported aggravated assault has shown a three-fold increase since 1960. From 1960, the presence or use of a firearm in aggravated assault increased from 3% to 25% in 1975 and 22% in 1978, while the presence or use of a knife decreased from 44% to 23%. During this period, one also sees a gradual increase in the use of blunt objects (24% to 28%) and the use of personal weapons, such as fists (12% to 27%).

The general patterns emerging from this trend analysis are that UCR violent crime rates have increased by a factor of 2 to 4 with the rates accelerating during the late 60s and early 70s. Homicide and robbery rates peaked in the mid 1970s and then stabilized or declined from 1975 to 1978, while rates of aggravated assault and rape continue to increase. For the three violent crimes for which there is weapons information, one finds a uniform increase in the use of firearms from the early 60s to the mid 70s, at which point firearm use has declined about 5 percentage points. The use of knives has dropped in homicides and aggravated assaults, while knife use in robberies has remained constant over the two decades. The use of blunt objects has remained the same over this period for homicide and robbery. However, for aggravated assault, there has been a gradual increase in the use of blunt objects and personal weapons, corresponding to the decrease in knife use.

A Note on Clearance Rates

The character and extent of violent crime as indexed by reported murders, aggravated assaults, robberies and forcible rapes should be

TABLE 8-4  
AGGRAVATED ASSAULT TRENDS FROM THE UCR

<u>Year</u>	<u>Number</u>	<u>rate/ 100,000</u>	<u>% Firearm</u>	<u>% Knife</u>	<u>% Blunt Weapon</u>	<u>% Personal Weapon</u>	<u>% Other Weapon</u>	<u>Clearance Rate</u>
1960	154,320	86.1	13%	44	24	12	7	76%
1965	215,330	111.3	17%	36	22	25	*	73%
1970	334,970	164.8	24%	28	24	23	*	65%
1975	484,710	227.4	25%	24	25	27	*	64%
1978	588,102	255.9	22%	23	28	27	*	62%

\*No data available. No data was collected on "other weapon" in 1964-1978.

SOURCE: Data for frequency and rates/100,000 for 1960-1975 are from UCR, 1975, p. 49. Frequency and rates/100,000 for subsequent years are from individual UCR's for each year. Note that there are discrepancies between the yearly UCR figures and those shown in the UCR 1975 longitudinal trends for 1960-1975. Weapon use and clearance rates are from the UCR's for each year. Weapon use for 1960 is from a special survey conducted in that year.

examined with respect to the average clearance rates (i.e., the percent of crimes reported to the police which are cleared by arrest or are solved in another manner). A decrease in the clearance rate may not necessarily represent a reduction in police department capability or competence to arrest suspects. Rather, it may represent more accurate and conscientious recording by police departments of reported incidents. The significant reduction in clearance rates for the four crimes examined here therefore raises the following questions: Are police departments generally recording more incidents than they did in the past, a higher accuracy which has led to diminished clearance rates? Or are police departments handling certain sorts of incidents differently now than they did in the past? Are police departments less able to respond to incidents by gathering evidence and identifying suspects? Are police officers less likely to be able to arrest suspects? One also wonders whether more individuals (either victims or observers) are reporting incidents to the police now than in the past, a factor which may result in more reported incidents that may be unfounded, in which suspect identification is more difficult to make or than departments can handle given current levels of police personnel.

Longitudinal trends in clearance rates for UCR Index property and violent crimes were analyzed and Table 8-5 depicts these for 1960 to 1978. One sees that for violent crimes there has been a 26% rate of reduction in the clearance rate (from 62% to 46%) and for property crimes, a 22% rate of reduction in the clearance rate (from 23% to 18%). Although the rates of reduction for these two are not significantly different,

TABLE 8-5a  
TRENDS IN PROPERTY AND VIOLENT CRIME CLEARANCE RATES

	Clearance Rates					% Rate of Change	Percentage Point Change
	1960	1965	1970	1975	1978		
<u>Property Crimes</u>							
Burglary	30%	25%	19%	18%	16%	47%	14
Larceny	20%	20%	18%	20%	20%	0%	0
Motor vehicle theft	26%	25%	17%	14%	15%	42%	11
<u>Violent Crimes</u>							
Murder & nn mansl.	92%	91%	87%	78%	76%	17%	16
Forcible rape	71%	64%	56%	51%	50%	30%	21
Robbery	38%	38%	29%	27%	26%	32%	12
Agg. assault	75%	73%	65%	64%	62%	17%	13
<u>Overall</u>							
Property	23%	22%	16%	19%	18%	22%	5
Violent	62%	59%	48%	45%	46%	26%	16

SOURCE: For 1960, calculated from UCR, 1960, Tables 5 and 8, pp: 79-83. For 1965, calculated from UCR, 1975 Table 8, p. 97. For 1970, 1975, and 1978, see UCR's for those years, Tables 12 (p. 108), 18 (p. 166), and 21 (p. 179), respectively.

TABLE 8-5b  
TRENDS IN PROPORTION PROPERTY AND VIOLENT CRIME: INDEX I OFFENSES

	1960	1965	1970	1975	1978
Rate/100,000 violent crime	160.9	200.2	363.5	481.5	486.9
Rate/100,000 violent & property	1887.2	2449.0	3984.5	5281.7	5109.3
% Violent crime	8.5%	8.2%	9.1%	9.1%	9.5%

the percent point change is. For violent crimes, there has been a 16 percentage point change, while for property crimes, a 5 percentage point change.

This discussion of changing trends in clearance rates raises questions about the changing nature of violent crime, its reporting by citizens, police recording practices, and police activity with respect to investigation and arrest. The reasons for these changes are difficult to specify because there is no evidence on a national level prior to 1973 (the Victimization surveys) that could aid us in this question.

#### Trends in Violent Crime from Victimization Surveys

Victimization sample surveys were conceived in the mid 1960s to provide more accurate estimates of the frequency of particular crimes, as well as to more comprehensively assess the nature of criminal incidents. The first surveys were conducted for the President's Commission on Law Enforcement and Criminal Justice (Biderman *et al*, 1967; Reiss, 1967; National Opinion Research Center, Ennis, 1967). This initial work ironed out methodological problems and reveal the significant utility of the victimization approach in estimating the incidence of particular crimes. Late in 1969, work began on the development of a National Crime Survey (NCS), with collaboration between the Law Enforcement Assistance Administration (LEAA) of the Department of Justice and the Bureau of the Census. The NCS was first fielded in mid-1972, and 1973 marked the first complete year of the survey's operation. NCS data collection was discontinued in 1977 for city specific estimates, but continues for national estimates.

The NCS involved two distinct data collection efforts. The first was a continuous, nation-wide panel study (hereafter referred to as the national

sample), and the second was a series of surveys conducted in 26 of the largest cities in the U.S. (hereafter referred to as the city sample). The city sample surveys began in the fall of 1972, and follow-up surveys of households and businesses were conducted in early 1975 for 13 of the original 26 cities.<sup>2</sup>

The crimes measured by the NCS generally correspond to the UCR Index offenses (excluding criminal homicide); however, the presentation of victimization data differs from that of the UCR. The personal crimes measured by the NCS include rape, personal robbery, simple assault, aggravated assault, and personal larceny; the household victimizations include burglary, household larceny and motor vehicle theft; and the commercial victimizations include burglary and robbery of business establishments or other institutions. Our analysis of victimization trends focuses on personal victimizations and commercial robbery, using the NCS national sample for 1973 through 1976 in comparison to the UCR trends. We briefly examine the city sample to highlight differences among cities in patterns of weapon use.

Before turning to these data, a brief discussion of the differences in the measurement of crime by victim surveys and the UCR is necessary. These differences highlight the problems involved in attempting to make comparisons between the two. First, victimization estimates and characteristics of victimizations are obtained from a national sample of households and commercial establishments or institutions and are therefore subject to sampling error. Victimization estimates may also be subject to error associated with respondent recall and response effects. Reiss's (1967) study of methodological problems of early victim surveys showed

that 20% of persons known to have reported incidents to the police failed to volunteer this information in a follow-up interview. He also found that minor variations in the wording and timing of questions had substantial effects on response patterns (Ibid.: 148-150). Although UCR data are not subject to sampling error, they contain a large, but unknown measurement distortion of the "true" level of crime.

Second, with the exception of robbery and motor vehicle theft, it can be difficult and misleading to make comparisons between UCR and victim survey measures of crime. The UCR crime counts are those that are legally recognized criminal incidents, while the victimization estimates are those that are respondent-defined criminal incidents. In one study, a lawyer reviewed the victim interview schedules and concluded that 20% of the incidents reported were not legally actionable offenses (Ibid.: 151-152).

Third, "weapon use" is defined differently for the two measures. The victim survey definition of "weapon use" is threat of or actual use of a weapon, such as a firearm, knife, club, or bottle; it does not include "personal weapons", such as teeth or fists, as the UCR does. Fourth, the two gather data from somewhat different population groups. UCR data cover crimes that occur (that is, have been reported) within a particular jurisdiction. Victimization surveys collect data from residents or establishments located in a jurisdiction. There are also difference in coverage by age; victimization incidents are for individuals 12 years or older, while the UCR includes all age groups.

Victim Survey Estimates: Victimization data for personal incidents are organized in two ways: the number of victimization incidents and the number of victimizations. Since any personal incident can involve more

TABLE 8-6  
TRENDS IN VICTIMIZATION RATES FROM LEAA VICTIM SURVEYS

	Rates per 1000 <sup>a</sup>			
	1973	1974	1975	1976
Personal Sector				
Crimes of Violence	33.9	32.8	32.7	32.6
Rape	1.0	1.0	0.9	0.8
Robbery with injury	2.4	2.3	2.1	2.1
Robbery without injury	4.5	4.8	4.6	4.4
Aggravated assault w/injury	3.4	3.3	3.3	3.4
Aggravated assault attempt with weapon	7.0	7.0	6.3	6.4
Simple assault w/injury	3.9	3.5	4.1	4.0
Simple assault attempt without weapon	11.8	10.9	11.4	11.4
Crimes of theft	93.4	94.9	95.8	96.1
Personal larceny w/contact	3.2	3.1	3.1	2.9
Personal larceny wo/contact	90.3	91.7	92.9	93.2
Household Sector				
Burglary, larceny, vehicle theft	221.2	234.7	236.1	229.4
Commercial Sector				
Burglary	203.7	226.1	228.6	217.3
Robbery	38.8	38.8	39.4	38.5

<sup>a</sup>Rates per 1000 persons, households or commercial establishments.

SOURCE: Criminal Victimization in the United States, 1973, 1974, 1975, and 1976.

than one person, the number of victimizations exceeds the number of incidents. Table 8-6 presents the victimization rates for personal, household, and commercial crimes for 1973 through 1976. During this period, there have been no substantial changes in the victimization rates for personal and commercial crimes of violence. There was a slight increase and then decrease in the rates of household and commercial theft, but these differences from year to year are within the sampling error associated with these victimization estimates.

Table 8-7 shows the total number of victimizations, violent and non-violent, within the personal and commercial sectors (commercial violent crimes are robberies). About one-quarter of all personal victimizations were violent crimes, while only about 15% of the commercial victimizations were violent. If we exclude the category of simple assault without a weapon from the numerator of these calculations (to make the information more comparable to the UCR's definition of violent crime), about 17% of all personal victimizations were violent from 1973 to 1976. The last line of Table 8-7 shows that about 9-10% of all victimizations are violent crimes -- using a definition of violent crime which is comparable to the UCR. These percentages are similar to those found for the UCR Index offenses (see Table 8-5b).

The trends in weapon use in violent crime victimizations are shown in Table 8-8. In most categories, there has been a slight decline in the percent of victimizations where a weapon was used, from 40% in 1975 to 36% in 1976. This decline is particularly apparent in the reports of personal robbery with injury and commercial robbery. The upper portion

TABLE 8-7  
NUMBER OF VICTIMIZATIONS FROM LEAA VICTIM SURVEYS

	Number of Victimitizations (000s)			
	1973	1974	1975	1976
Crimes of personal violence	5,493.6	5,399.0	5,448.0	5,599.0
Crimes of personal violence (excluding simple assault attempts without weapon)	3,586.5	3,613.0	3,549.0	3,642.0
Total Personal Crimes	20,653.0	21,009.0	21,418.0	22,118.0
Crimes of commercial violence (robbery)	264.1	267.0	264.0	279.0
Total Commercial Crime	1,649.1	1,822.0	1,798.0	1,853.0
Total Crime Victimitizations	37,656.9	39,694.0	40,483.0	41,170.0
% crimes of personal violence to total personal crime	26.6%	25.7%	25.4%	25.3%
% crimes of commercial violence to total commercial crime	16.0%	14.6%	14.7%	15.0%
% crime of violence (excluding simple assault) to total crime	10.2%	9.8%	9.4%	9.5%

SOURCE: Criminal Victimitizations in the United States, 1973, 1974, 1975, and 1976.

of the table shows that weapons are used in about one-fourth of rapes, one-half of personal robberies, 40% of attempted commercial robberies, 70% of completed commercial robberies, and 95% of aggravated assaults.

The lower portion of Table 8-8 shows the breakdown of the type of weapon used in these violent crime categories. The use of a gun has declined slightly in the crimes of robbery and attempted commercial robbery over this time period. The estimates for the use of a gun in rape, while somewhat unstable given the low incidence and the sample size, also showed a decline. The use of a gun appears to have been stable in aggravated assaults, with guns used in about a third of all assault victimizations. For personal robbery in which the victim sustained injury, firearms were used in about 10% of the incidents, while knives and other weapons were used in about 16% and 18-20% of the incidents, respectively. By contrast, for personal robbery in which the victim did not sustain any injury, firearms were used far more frequently (in about 20% of all such robberies). Knives were used about 20% of the time, while other weapons were used less frequently. The presence of a firearm during robbery may deter the possibility of injury by serving to intimidate the victim into compliance. A more detailed analysis of the reasons for the differences in use of firearms by crime categories is dealt with in Chapter 11.

For attempted commercial robberies, firearms were used in far lower proportions (about 20%) than in completed robberies (about 63%). Knives and other weapons were used to about the same degree for attempted or completed commercial robberies. The implication here is that the use of a firearm in a commercial robbery may greatly enhance the success of the

TABLE 8-8  
TRENDS IN WEAPON USE IN CRIMES - LEAA VICTIM SURVEYS

	% of incidents with weapons			
	1973	1974	1975	1976
Rape and attempted rape	24%	30%	24%	27%
Personal robbery w/injury	47%	45%	52%	38%
Personal robbery wo/injury	49%	49%	49%	48%
Attempted commercial robbery	39%	39%	46%	41%
Completed commercial robbery	68%	73%	78%	74%
Aggravated assault	95%	94%	94%	94%
Simple assault	xx	xx	xx	xx
All incidents	38%	39%	40%	36%

	Types of weapons used			
	1973	1974	1975	1976
Rape and attempted Rape				
Gun	10%	15%	8%	7%
Knife	6	12	9	16
Other	7	1	7	6
Not ascertained	1	1	1	1
Personal robbery w/injury				
Gun	8%	9%	11%	6%
Knife	16	17	16	11
Other	18	14	23	20
Not ascertained	5	5	6	4
Personal robbery wo/injury				
Gun	22%	18%	22%	19%
Knife	18	21	19	21
Other	8	8	9	8
Not ascertained	1	2	1	1

Table continued next page

TABLE 8-8 (Continued)

	Types of weapons used			
	1973	1974	1975	1976
Attempted commercial robbery				
Gun	21%	17%	31%	23%
Knife	11	12	9	8
Other	7	9	5	10
Completed commercial robbery				
Gun	59%	63%	64%	63%
Knife	6	7	11	7
Other	3	3	3	4
Aggravated assault				
Gun	29%	31%	30%	29%
Knife	26	25	26	23
Other	35	24	37	39
Not ascertained	5	4	4	6

SOURCE: Criminal Victimization in the United States, 1973, 1974, 1975 and 1976; Sourcebook of Criminal Statistics, 1977 and 1978.

For attempted and completed commercial robbery, information was collected on the type of weapon only if the weapon could be identified by those present; thus the category "not ascertained" is not used for these incidents.

perpetrator. Lastly, for aggravated assaults, firearms, knives and other weapons were used in roughly equal proportions of about 30 to 33% each during this period.

Having presented these figures, let us turn these percentages and rates into concrete numbers of incidents in which weapons were used. Since the rates of violent crime, the proportions in which weapons were used, and the type of weapons used have been fairly stable from 1973 to 1975, the year of 1975 will be used.

Table 8-9 shows that during 1975 there were an estimated 4.8 million incidents of personal and commercial violent, involving 5.7 million victimizations. Assuming that two weapons were used in incidents involving more than one weapon, about 4% of the incidents involved multiple use of weapons. For all incidents of personal and commercial violence, a total of 1.9 million weapons were used: these involved over 700,000 firearms, 537,000 knives, 609,000 other weapons, and 81,000 weapons not specified. Weapons were employed in 40% of all incidents of violence, with firearms used in 15% of the incidents; knives, 11%; and other weapons, 13%.

Overall, our analysis of the victimization data shows stability over the four-year period, both in the rates of victimization and in the types of weapons used. These national trends, however, do mask differences among cities in the rate at which various weapon type are employed. From the victimization survey data of 13 cities collected in 1975, one finds large variation in weapon use in incidents, and more specifically, in the use of firearms (Tables 3.53 and 3.54, Sourcebook of Criminal Justice Statistics: 1977). For example, weapon use in rape varies from 13% (for Dallas) to 58% (for New York); and for personal robbery, a low

TABLE 8-9  
NUMBER OF WEAPONS USED IN INCIDENTS (1975)

	Total Incidents	N-of Guns	N of Knives	N of Other	N Unknown	Incidents w/ weapons
Rape and attempted rape	144,075	11,000	13,000	9,876	1,230	34,285
Personal robbery	958,410	177,299	171,350	128,087	26,332	478,880
Commercial robbery	264,400	147,750	28,165	9,613	1,517	181,528
Aggravated assault	1,232,980	364,488	324,278	461,173	52,244	1,160,168
Simple assault	2,211,607	*	*	*	*	*
Total	4,811,472	700,637	537,170	608,749	81,328	1,855,373
% weapon use		15%	11%	13%	1%	40%
Total number of incidents with a weapon		1,855,373				
Number of incidents with 1 weapon		72,506				
Total number of weapons 1+ incidents		1,927,879				

\*Weapons not used in "Simple assault".

SOURCE: Sourcebook of Criminal Justice Statistics, 1977, Table 3.20.

of 37% (for Portland, Oregon) to a high of 64% (for Atlanta). Cities in which weapons are used in higher than average proportions include Atlanta, Chicago, Detroit, and New York; in contrast, weapon use is low in Dallas, Denver, and Portland. With one exception, those cities having high weapon use in violent crimes are also those cities in which firearms are used in greater proportions than other weapons. New York City is the anomalous case for which overall weapons use in crime is high, but where knives or other weapons are used in higher proportions than firearms.

#### Accidental and Self-Inflicted Death and Injury Trends

In this section, we move from the assessment of the extent of criminal violence to the forms of death and injury which occur from violent, but non-criminal, means. Specifically, we examine the longitudinal trends of death and injury from motivated, self-inflicted injury (suicides and attempted suicides) and accidents. At the beginning, we should note that there are, of course, problems with the assignment of "suicide", "homicide" or "accident death" labels caused by the predilections of law enforcement agency personnel, medical personnel, and friends or relatives (Douglas, 1967). However, it is doubtful if these definitions have changed during the period studied.

The sources for estimating deaths and injuries by violent, non-criminal means are the National Center for Health Statistics (NCHS) Vital Statistics for the U.S. and the NCHS's annual National Health Survey (NHS).

The Vital Statistics of the U.S. (more specifically, the death statistics) are compiled through a Current Mortality Sample (CMS) collected

each month by the NCHS from the 50 states, the District of Columbia, Chicago, and New York City. The CMS is a 10% systematic random sample of all death certificates (excluding fetal deaths) that have been filed in the jurisdiction.

The NCHS NCHS's estimates of injuries are derived from a multi-stage probability sample of households. Each week, a set of sample households is interviewed by the Bureau of the Census, and respondents are asked to provide information related to injuries they sustained within two weeks prior to the interview. Quarterly estimates are made by computing an average two-week estimate produced by the 13 weekly samples and multiplying by 6.5. The annual injury total is the sum of the four quarters.

Because these two sources are based on either actual events (death certificates) or non-self-selected samples (household sample), they are likely to produce estimates of injuries and deaths that are higher than those generally found from studies of emergency rooms, for example, where only a selected sub-group of all injuries are counted. In addition, the death and injury estimates derived here are subject to sampling error; in the case of the death data this error is small, while that for the injury estimates is much larger.

Suicides: Table 8-10 presents the trends in the estimated number of suicidal deaths from 1960 to 1977. One sees that there has been a gradual increase in the rate per 100,000 persons, from 10.6 to 13.3; and the number of suicides has increased from about 20,000 to 30,000 over the two decades. And, an important trend over time has been the increase in suicides with the use of a firearm: from about 47% of all suicides in 1960 to 56% in 1977. Suicide is a predominantly white male activity

TABLE 8-10  
TRENDS IN RATES OF SUICIDE AND MEANS OF DEATH

Year	Number	rate/ 100,000	Firearm	Poison	Hanging & Strangul.	Other
1960	19,041	10.6	47%	23	18	12
1965	21,507	11.1	46%	28	15	11
1970	23,480	11.5	50%	28	14	8
1975	27,063	12.7	55%	24	13	8
1977	28,681	13.3	56%	23	13	8

MEANS OF SUICIDE BY SEX

Year	Firearms		Poison		Hanging & Strangul.		Other	
	Male	Female	Male	Female	Male	Female	Male	Female
1964	56%	25%	20	46	15	13	9	16
1970	58%	30%	20	48	15	12	7	10
1975	62%	36%	17	42	14	11	7	11
1977	63%	36%	16	42	14	11	7	11

SOURCE: Vital Statistics, as reprinted in Table 301 of Statistical Abstracts of the US, 1978. Means of death by sex for 1964 from NCHS Series 26, No. 5 (1967), p. 4.

with about two-thirds of the suicides committed by this demographic group. Large sex differences in means of suicide are also seen with men using firearms to a much higher extent than women. By contrast, women are far more likely to use poisonous substances as the means of death. These sex differences in means of suicide have important implications for the incidence of attempted suicide which does not end in death (see below). However, the trend for women is their increased use of firearms in committing suicide, from 25% in 1964 to 36% in 1977.

The incidence of attempted suicide is difficult to know with certainty; most authors believe that the ratio of attempted to completed suicide is on the order of 8:1 to 10:1. One study which attempts to understand patterns of attempted and completed suicide is Schneidman and Faberow (1961) conducted in Los Angeles during the late 1950s. Their estimates of the means of attempted suicide are subject to methodological problems (e.g., low response rates in obtaining this information from physicians); in addition, it is uncertain whether their results for Los Angeles are generalizable to the nation, nor whether they hold for today. We only then highlight some of their findings to get a picture of this little known phenomena.

In comparison with completed suicide, attempted (but unsuccessful) suicides are far more prevalent for females, a fact attributed to their preference for barbituates or other pills taken in large doses. The use of firearms in attempted suicides is very low, and based on Schneidman and Faberow's research is probably in the range of 3 to 6%. Tentatively, we can conclude that in the past five years, there have been an annual number of approximately 200,000 to 300,000 attempted suicides, a small

proportion of which were committed with firearms.

Accidental Deaths: Data on accidental deaths over the past 25 years show that there has been a slight decrease in the rate of deaths attributed to accidents, from 58.1 per 100,000 in 1966 to 47.9 per 100,000 in 1978 (National Safety Council, Accident Facts, 1975). This decrease has been largely due to a reduction in fall-related deaths. Examination of the seven major accident death categories reveals that motor vehicle accidents account for 40 to 50% of all annual deaths over the last two decades. Except for increases in motor vehicle accidents and decreases in fatal accidents caused by falls, there is a remarkable similarity from decade to decade in the proportion of deaths attributed to various causes. Specifically, for our purposes, we find that firearms have accounted for only about 2% of all annual accidental deaths from 1953 to 1978.

In Table 8-11, the circumstances surrounding firearms-related accidental deaths are shown in more detail. From 1960 to 1978, there has been a decrease in recreation-related deaths involving firearms (hunting accidents) from 6% to 3% of all deaths occurring from sporting or recreational activities. The proportion of deaths in which firearms were accidentally used in the home has remained stable at about 4 to 5% of all home accidents. Examining firearm-related accidental deaths only for 1966 to the present, one finds that hunting accidents uniformly comprise about 40% of deaths, while the remainder involve deaths from playing with firearms in the home or in other areas. Fatal firearms accidents occur predominantly among young males: in 1977 this group was 85% of all deaths, with the largest age group at risk being 15 to 24 year olds.

TABLE 8-11  
TRENDS IN CIRCUMSTANCES SURROUNDING FATAL FIREARMS ACCIDENTS

Year	Recreational Deaths		Home Deaths		Location of Accident		
	Total	w/Firearms	Total	w/Firearms	Hunting	Home	Other
1960	17,000	1,100 (6%)	28,000	1,200 (4%)	48%	52	-
1966	20,000	1,000 (5%)	29,500	1,400 (5%)	40%	55	5
1970	23,500	900 (4%)	27,000	1,400 (5%)	37%	58	5
1975	23,000	900 (4%)	25,000	1,300 (5%)	38%	55	7
1978	21,500	700 (3%)	23,000	900 (4%)	39%	50	11

Note that percentages for recreational and home deaths are approximate since the numbers were rounded off.

SOURCE: National Safety Council Accident Facts, 1978, pp. 74.

Injuries: Longitudinal trends over the last 25 years in the rates of accidental injuries which resulted in restricted activity or in medical attention reveal that falls and bumping into persons or objects or being struck by objects accounted for half of all accidental injuries sustained by the U.S. population in 1960 and 40% in the early 1970s. For our purposes, the categories of interest are those that are weapons-related; these include "discharge of a firearm" and "cutting or piercing instrument." In 1959-1961, injury estimates for "uncontrolled firearm or explosion" and "discharge of a firearm" were combined into a single category, while they were separately estimated for 1971-72. However, the NHS (1976) cautions that firearms injury estimates are subject to large sampling error (in this case a standard error which is over 45% of the size of the estimate). Our estimates, therefore, of the annual incidence of firearms-related injuries can only be approximate.

There are widely varying estimates of the incidence of firearms-related injuries cited in the literature. Askrant and Joliet (1968) estimated, based on NHS 1959-61 data, that over 100,000 injuries were annually sustained from firearms; while Newton and Zimring (1969) estimated that the annual number of such injuries was 20,000, using a National Rifle Association study. For the 1970-1971 period, the NHS estimate is 155,000 injuries, with a 67% confidence interval of 82,500 injuries to 217,500 injuries.

The NHS has not compiled more recent information on firearms-related injuries for publication or which would be available by request. Its 1972 through 1977 publications show broad categories of types of injuries, the closest firearms-related category being injuries sustained

by "contusions and lacerations". Thus, we need to estimate a firearms-related injury figure for 1975 based on prior estimates. NCHS data shows that firearms injuries constituted about .2 to .25% of all annual injuries in both 1959-1961 and 1971-1972. Applying this percent to the total injuries for 1975 (76,192,000), we get about 183,000 firearms-related injuries.

By contrast, injuries sustained from "cutting and piercing instruments" (estimated for 1975 from 1959-1961 and 1971-1972 estimates) occur roughly 30 times more frequently. Although it is difficult to know all the types of "piercing instruments" involved in these injuries, and therefore whether all would be appropriately classified as weapons, it is clear that firearms are a far less prevalent source of injury than other potentially injurious objects (knives, etc.). Firearms, however, are far more lethal weapons, as evidenced by the injury to death ratios using these weapons, a ratio of 75:1.

#### Police Homicide and Deaths and Assaults of Police Officers

The annual incidence of police homicide (also termed "intervention by police") is documented by the NCHS Vital Statistics, and the trends are shown in Table 8-12 for 1970 to 1977. From this table, one sees that there have been roughly 250 to 400 such deaths caused by the police annually, and that there appears to be a decreasing trend in this form of death after 1974.

Deaths and assaults of police officers have been routinely collected by the FBI's UCR, and beginning in 1969 weapon use in assaults was documented. The counts of assaults and deaths of police officers shown in

TABLE 8-12  
TRENDS IN POLICE HOMICIDES AND DEATHS AND INJURIES OF POLICE OFFICERS

Year	N of Police Homicides	N of Police Deaths	By Weapons	By Accidents	N of Police Assaults	Type of Assault Weapon Used			
						Gun	Knife	Other	Personal
1960	245	48	28	20	9,621 (6/100)	*	*	*	*
1965	271	83	53	30	20,523 (11/100)	*	*	*	*
1970	333	146	100	46	43,171 (19/100)	5%	3	13	79
1975	336	*	129	*	44,867 (15,100)	7%	3	10	80
1978	*	*	93	*	56,130 (16/100)	5%	3	10	82

NOTES: In 1971, the base number of police officers changed to include incidents in and officers from Puerto Rico, as well as Federal police officers. After 1973, no UCR data are shown for police deaths incurred by accidents. The UCR shows that 95 to 96% of police deaths by weapons are by firearms.

SOURCES: Police homicide data from the Vital Statistics, as reprinted in the Statistical Abstract of the U.S., 1978, Table 301. Police deaths and assaults from the UCR for the individual years.

Table 8-12 are separate from those estimated by the victim surveys and contained in the UCR criminal homicide statistics. Up until 1974, the UCR shows deaths of police officers incurred by weapons and accidents (largely motor vehicle accidents), but beginning in 1974 only deaths from weapons are shown in the UCR. One sees that similar to the other criminal violence statistics, deaths of police officers increased from 1960 to the mid-1970s, and then show a decline following that period. Roughly 100 officers are annually killed while carrying out their police work, and 95% of these deaths are incurred by firearms. The circumstances leading to the killing of police officers over the past two decades are primarily the following: intervention in robberies in progress or pursuing robbery suspects, attempting other arrests (except robberies and burglaries), responding to domestic disturbance calls, and traffic pursuits and stops.

The number of assaults of police officers has increased from about 10,000 in 1960 to 56,000 in 1978; however, the rate of assault per 100 officers has remained steady since 1968, with about 15 to 17% of police officers annually assaulted. About 30 to 40% of these assaults result in injury to police officers. Weapons, such as guns, knives, and other types, are used in about 20% of all assaults, while personal weapons are used for the remainder. Since 1969, when data were first collected, the use of various types of weapons has remained the same: about 5% of assaults involve firearms; 3%, knives; and 10%, other types of weapons. The circumstances surrounding assaults of police officers are primarily the following: responding to domestic disturbance calls, attempting other arrests, handling or transporting prisoners, and traffic pursuits and stops.

TABLE 8-13  
ESTIMATES OF VIOLENT CRIME AND DEATH AND INJURY BY VIOLENT MEANS, 1975

Deaths	Estimate (±)	67% C.I. Range	% with Firearms
Murder and nn. manslaughter <sup>1</sup>	20,510 (NA)	20,510	63%
Police officers <sup>1</sup>	129 (NA)	129	96%
Police homicide <sup>2</sup>	336 (NA)	336	100%
Suicide <sup>2</sup>	27,063 (550)	26,510 - 27,610	55%
Firearms accidents <sup>3</sup>	2,380 (155)	1,125 - 2,535	100%
	50,418	48,610 - 51,120	
<u>Incidents of Criminal Violence, Injury, and Threat*</u>			
Rape and attempted rape <sup>4</sup> (59%)	151,000 (18,000)	133,000 - 169,000	8%
Aggravated assault <sup>4</sup> (36%)	1,590,000 (49,000)	1,541,000-1,639,000	30%
Assault <sup>4</sup> (27%)	2,586,000 (65,000)	2,521,000-2,651,000	0%
Personal robbery <sup>4</sup> (33%)	1,121,000 (41,000)	1,080,000-1,162,000	18%
Commercial robbery <sup>4</sup>	264,000 (30,100)	234,300-294,500	56%
Assaults of police <sup>1</sup> (42%)	44,900 (NA)	44,900	7%
Firearms accidents <sup>3</sup>	183,000 (76,900)	106,100-259,900	100%
Attempted suicide <sup>5</sup>	270,000 (NA)	270,000	3-6%
	6,210,300	5,903,300-6,490,000	

\*Percents in parentheses show proportions of victims injured during the incident.

- SOURCES: <sup>1</sup>Uniform Crime Reports, 1975  
<sup>2</sup>National Center for Health Statistics, Vital Statistics, 1975  
<sup>3</sup>NCHS and National Safety Council (based on 1971-1972 estimate)  
<sup>4</sup>Criminal Victimization in the United States, 1975  
<sup>5</sup>Based on a ratio of 10:1 attempted to completed suicides

Summary and Estimates of Violence

In this chapter, we have considered all the various circumstances by which individuals die or are injured annually from violent criminal and non-criminal means. Table 8-13 and 8-14 present estimates of the annual death and injury, using 1975 as the referent year.<sup>3</sup> For that year, there were 1.9 million deaths, over 50,000 (or 3%) of which were caused by criminal homicide, suicides, firearms accidents, and police-citizen encounters. There were approximately 6.2 million incidents of criminal violence and injury by accidental or suicidal means; these types of incidents to total accidental injuries experienced by Americans occurred on a ratio of 1:12.

Examining firearms as the weapon involved in annual death and injury (Table 8-14), we estimate that, in 1975, over 30,000 deaths resulted from the criminal, accidental, and suicidal use of firearms; and that almost 900,000 firearms were present, brandished, or fired in victimization incidents, accidents, attempted suicides, or police-citizen encounters. Thus, nearly 1 million deaths, injuries, or intimidations occurred in 1975 with the use of firearms. This is about 1% of all annual deaths and injuries from all causes (accidents and health-related).

Excluding health-related deaths, we find that deaths from criminal homicide, suicide, police-citizen encounters, and firearms accidents accounted for one-third of all annual deaths in 1975. Examining the proportions of firearms-related deaths and injuries, 20% are incurred from the accidental use of firearms; 3% from suicide and attempted suicide; 1.5% from criminal homicide, and .5% from police-citizen encounters.

TABLE 8-14

PROPORTION OF ANNUAL DEATHS AND INJURIES BY VIOLENT MEANS  
TO TOTAL ANNUAL DEATHS AND INJURIES, 1975

<u>Deaths</u>		<u>Percent of all deaths</u>	<u>Percent of all death, excluding health</u>
Total deaths from criminal homicide, police homicide, suicide, and firearms accidents	50,418	3%	33%
Total deaths, other causes			
Accidents (except firearms)	100,650	5	67
Health-related	1,759,060	92	--
	1,910,128	100%	100%
<u>Violence and Injury</u>			
Total incidents of violence, threat of violence and firearms accidents	6,210,000		The ratio of criminal and accidental violence to accidental injury is 1:12.
Total injuries by accidents (except firearms)	76,009,000		

Annual Deaths and Injuries Attributed to Firearms or the Use of Firearms for threat, 1975

Criminal homicide	12,920
Police officers	123
Police homicide	336
Suicide	14,885
Firearms accidents	2,380
<u>Death by firearms</u>	<u>30,644</u>
Firearm use in victimizations	700,637
Assaults of police	3,141
Firearms accidents	183,000
Attempted suicide	10,000
<u>Injuries by Firearms</u>	<u>896,778</u>
Total injuries and deaths by firearms, 1975	<u>927,422</u>

FOOTNOTES

1. The tables presenting the trends in violent crime rates from the Uniform Crime Reports show the data in five-year intervals from 1960 to 1978 (additional years are included in certain tables to better show the weapons use trends). This selected presentation does not distort the trends, which are fairly smooth during the omitted years. Readers are referred to the original UCR crime reports for the full year-by-year crime rate changes.
2. Details on the methodology employed in these surveys can be found in Hindelang (1976), Hindelang, Gottfredson, and Garofalo (1978), and in the national and city sample victimization reports published by LEAA (Criminal Victimization in the U.S., 1973, 1974, 1975, and 1976 for the national sample; and Criminal Victimization Surveys in the Nation's Five Largest Cities and individual city victimization reports for the city samples.
3. We remind the readers of the trends in violence found earlier in this chapter, where the trends peaked in 1974-1975 and have since shown a slight decline to 1978. Thus, the use of 1975 as the referent year for the calculation of the estimates of total violence by weapons may over-estimate the more recent amount of violence. However, 1975 is the most recent year in which a full set of data from all necessary sources is available.

CHAPTER NINE

CRIME AND VIOLENCE:

CHARACTERISTICS OF VICTIMS AND OFFENDERS

In the previous chapter, we reviewed the available data on the numbers of violent and criminal incidents that occur in the United States in the average year. Here, we review what is known about the characteristics of the persons involved in those incidents, both victims and offenders; in the following chapter, the firearms involved in those incidents are discussed.

The focus in this chapter is predominantly on nationally representative victim and offender data, drawn from the FBI's Uniform Crime Reports and the various criminal victimization surveys. There are several studies of single cities (e.g., Block, 1977, of Chicago; Munford et al., 1975, of Atlanta) that are touched on only lightly. Where possible, we deal most extensively with the characteristics of persons involved in firearms incidents specifically, although the general indifference of the data sources to firearms use in crime has caused us in most cases to deal with entire categories of criminal violence without further specification of the means of violence involved.

Firearms Accidents and Suicides

Concerning accidental firearms injuries and deaths, young males are by far the highest risk group. According to the National Health Survey (1971-1972), 76% of the persons injured in firearms accidents,

and 85% of those killed, were males, the bulk of them in both cases being under the age of 24. The Surgeon General's Report (1979) lists firearms accidents as the third leading cause of accidental death (after motor vehicle accidents and drowning) for males aged 15-24.

We noted in Chapter 8 that in 1975, 62% of all male suicides, and 36% of all female suicides, were committed with firearms. More men, by far, than women commit suicide (although the rates of attempted suicide appear to be about the same); in 1975, 73% of all suicidal deaths were by men. So far as we have been able to determine, no published data are available on the means of suicidal death by age or race. In general, suicides among whites (male and female) are more common among the old than among the young, whereas among blacks, the reverse is true. In 1975, about three-fifths of all black suicides were among persons under 40; the comparable figure for whites is about two-fifths (Vital Statistics of the U.S., 1975).

#### Police-Citizen Encounters

In 1975, 129 law enforcement officers were killed, and approximately 45,000 were assaulted, in the line of duty. According to Cook (1981), virtually all killings of policemen are done by firearms, in many cases with the officer's own sidearm (see Chapter 4). UCR data for 1966-1975 show that most slain officers are males, between the ages of 25 and 40, and having a median of five years' service to their departments. These figures are generally similar to the demographic profile of U.S. police as a whole.

The persons who are accused of killing policemen can be readily characterized: they are disproportionately young, non-white males

with prior criminal records. Between 1966 and 1975, 63% of the persons charged with the homicide of a police officer were under age thirty, virtually all (96%) were male, and over half (52%) were nonwhite. (Over the same years, the proportion nonwhite for the population as a whole was about 12%.) In general, all crimes (whether against property or the person) are disproportionately the activities of young non-white males.

According to the UCR data for the relevant years, most (76%) of those arrested for an officer slaying had a prior criminal record, with over half (56%) having a prior conviction. Also of some interest, 21% had a prior arrest for some sort of weapons violation, 16% were on parole or probation at the time of the offense, and 4% had had a prior murder charge. (Data on characteristics of those accused of officer slayings are shown in Table 9-1.)

The profile of persons killed by police officers is similar to that of those accused of killing police officers: most (98%) are male, and about three-fifths (61%) are under age 30. And again, non-whites are greatly over-represented (46%). In 1975, according to Vital Statistics for the U.S., 336 persons were killed by police (vs. 129 slain policemen in the same year).

Police officer homicides occur most commonly during attempts to arrest robbery suspects (20%), while attempting other arrests (23%), and while responding to disturbance calls (15%). Circumstances surrounding the assaults of approximately 45,000 police officers are: responding to disturbance calls (28%), attempting arrests other than robbery and burglary (22%), handling, transporting, and custody of

TABLE 9-1  
 CHARACTERISTICS OF PERSONS CHARGED WITH POLICE  
 OFFICER HOMICIDE (1966-1975)  
 (N = 1,438)

	<u>% of Offenders</u>
<u>Age</u>	
Less than 30	63%
Over 30	37
<u>Sex</u>	
Male	96%
Female	4
<u>Race</u>	
White	48%
Non-White	52
<u>Prior Record</u>	
Any previous arrest	76%
Convicted on prior criminal charge	56%
Prior arrest for crime of violence	40%
Convicted on criminal charge -- granted leniency	36%
On parole or probation at time of killing	16%
Arrested on prior murder charge	4%
Prior arrest for assaulting police officer or resisting arrest	9%
Prior arrest for weapons violation	21%

SOURCE: FBI Uniform Crime Report for 1975.

prisoners (11%), and traffic pursuits and stops (11%). (Data are from the UCR, 1975.)

Characteristics of Violent Criminal Offenders

Table 9-2 shows the age, sex, and race of persons arrested for UCR Index crimes in 1975; the last row of the table shows the equivalent demographic distribution for the population as a whole. Arrest data shown here, of course, are only for persons arrested for the various crimes and are thus possibly misleading as a profile of the criminal population as a whole, since only a fraction of the crimes committed result in an arrest.

These data confirm, once again, the most crime of all types is committed disproportionately by young non-white males. This is true in varying degrees of every one of the eight Index crimes. Persons under 21 are over-represented among the arrested population by factors ranging from 1.4 (homicide and non-negligent manslaughter) to 3.6 (motor vehicle theft); males are over-represented by factors ranging from 1.4 (larceny-theft) to 2.0 (forcible rape); non-whites, by factors ranging from 1.7 (negligent manslaughter) to 4.6 (robbery). Property crime in particular is a pursuit of the young, and robbery is committed heavily and predominantly by young non-whites. In general, the criminal distinctiveness of youth is more pronounced for property crime than for violent crime; the distinctiveness of males, more pronounced for violent crime; and the distinctiveness of non-whites, also more pronounced for violent crime. A final point of interest in the table: of the roughly 1.9 million Index offenses shown

TABLE 9-2  
CHARACTERISTICS OF PERSONS ARRESTED IN 1975,  
BY TYPE OF OFFENSE (UCR Index Crimes)

Offense	AGE				%	
	15-21	22-24	25-34	35+	Male	Nonwhite
<u>Violent</u> (N = 370,453)						
Homicide	30%	15	30	25	84	57
Negligent Mansl.	37	13	24	26	89	22
Forcible Rape	44	15	29	11	99	48
Robbery	53	14	18	5	93	60
Aggravated Assault	37	13	26	24	87	42
TOTAL	47	13	23	17	90	49
<u>Property</u> (N = 1,528,317)						
Burglary	75	9	11	4	95	30
Larceny-Theft	63	9	14	11	69	33
Auto Theft	76	8	10	4	93	29
TOTAL	70	9	13	8	78	32
<u>Total U.S. Population</u> <sup>a</sup>						
	21	6	18	55	49	13

SOURCE: 1975 Uniform Crime Reports.

<sup>a</sup>Age distribution for those 14 and over. U.S. totals are from Current Population Reports for 1975.

in the table, about one in five are "violent crimes" and four in five are "property crimes."

In principle, one should be able to obtain a better offender profile from criminal victimization surveys than from UCR data, since the former would include all offenses, rather than just the offenses that result in an arrest. There are, however, some serious problems in the victimization survey data on offenders: (i) Victim surveys may pick up many relatively trivial incidents or those that are only marginally "crimes" by legal definition. (ii) Victimization survey data on offenders depend entirely on the victim's perception of the offender's characteristics. In some cases (sex and perhaps race), these perceptions are likely to be reasonably accurate; in other cases (such as age), they are not. A final problem is that many of the offenses picked up in victimization surveys were committed by multiple offenders, which adds one additional complexity to the comparison of such data with UCR figures.

These caveats in mind, Table 9-3 compares UCR and victimization survey offender profile data. Note that victimizations involving multiple offenders are shown in a separate panel. In general, the offender profiles are more discrepant for some offense categories (e.g., rape) than for others (e.g., aggravated assault). Age comparisons are especially hazardous given (1) the high proportion of mixed ages among multiple offenders and (2) the victim's ability to correctly specify the age of offenders. If we assume that the mixed age group is evenly divided between younger and older age groups for each offense, and combine lone and multiple offender profiles, the data suggest a dis-

TABLE 9-3

COMPARISON OF OFFENDER PROFILES BY AGE, SEX, AND COLOR: UCR ARREST AND LEAA DATA, 1975

AGE Offense	UCR Arrest Data		LEAA (Lone Offender) <sup>1</sup>				LEAA (Multiple Offenders)				
	<21	>21	<12	12-20	>21	DK	All of Same Age			Mixed Ages	DK
							<12	12-20	>21		
Rape	37%	63%	0%	14%	81%	5%	0%	19%	36%	31%	14%
Robbery <sup>2</sup>	57	43	1	34	58	7	0	42	32	17	9
Aggravated Assault	32	68	1	26	70	3	1	37	33	22	7
Simple Assault	34	66	1	33	65	2	1	52	24	19	3

SEX Offense	UCR Arrest Data		LEAA (Lone Offender)		LEAA (Multiple Offenders)
	Male	Female	Male	Female	
Rape	99%	1%	97%	3%	(Published Data Not Available)
Robbery <sup>2</sup>	93	7	96	4	
Aggravated Assault	87	13	94	6	
Simple Assault	86	14	85	15	

COLOR Offense	UCR Arrest Data		LEAA (Lone Offender)			LEAA (Multiple Offenders)			
	White	Non-White	White	Non-White	DK	All of Same Color		Mixed	DK
						White	Non-White		
Rape	52%	48%	68%	32%	0%	42%	47%	8%	1%
Robbery <sup>2</sup>	40	60	39	57	4	27	65	6	2
Aggravated Assault	58	40	64	34	0	57	33	8	2
Simple Assault	64	36	71	27	2	64	28	7	2

Table 9-3 (Continued)

SOURCES: For LEAA data on color and age, from Sourcebook (1978), adapted from Tables 3.30 - 3.35; for LEAA data on sex, from Hindelang (unpublished ms., 1979). UCR data from UCR for 1975.

<sup>1</sup>LEAA data are collected only if victims are at least 12 years of age.

<sup>2</sup>Commercial and personal robbery incidents are included here to be compatible with the UCR robbery category.

proportionately high rate of arrest for the younger age group for the crimes of rape and robbery. For rape, 18% of the offenders (victim surveys) are under 21, whereas 37% of those arrested for the crime are under 21; and for robbery, the figures are 42% and 57%. Aggravated assault offender profiles for age, in contrast, are in high agreement (32% for UCR vs. 34% for victim survey are less than 21 years), while those for simple assault show the younger age group arrested in lower proportions than victim survey data would indicate (34% for UCR vs. 43% for victim survey).

Examining the profiles by sex, we find few differences except for the category of aggravated assault, in which higher proportions of females are arrested for this crime than the victimization survey profiles would indicate. For offender profiles by race, we find that there are only small differences (between 4 to 6 percentage points) in proportions of whites arrested and whites as perceived offenders in incidents of robbery, aggravated assault, and simple assault. For rape, however, higher proportions of non-whites are arrested than the victims' experiences would indicate (53% of the rape arrests are of whites, vs. 63% of the rape offenders perceived as white by the victims).

Multiple Offenders

Table 9-4 shows the proportion of reported victimizations that involved lone vs. multiple offenders over the various types of crimes. (Data are from the victimization surveys.) The presence of multiple offenders varies substantially over crime types, being relatively low for rape and personal larceny (22% and 23%, respectively) and very high for all categories of robbery (ranging upwards from 50%). It is

TABLE 9-4  
PERSONAL AND BUSINESS VICTIMIZATIONS:  
LONE VS. MULTIPLE OFFENDERS, U.S., 1975

Offense Type	% by Number of Offenders		
	Lone	Multiple	DK or N/A
RAPE AND ATTEMPTED RAPE	76%	22%	2%
PERSONAL ROBBERY			
Robbery and attempted robbery with injury	36	59	5
Serious assault	32	62	6
Minor assault	42	55	3
Robbery without injury	44	52	4
Attempted robbery without injury	52	48	0
AGGRAVATED ASSAULT			
With injury	62	33	6
Attempted with weapon	59	37	4
SIMPLE ASSAULT			
With injury	71	28	1
Attempted without weapon	69	29	2
PERSONAL LARCENY WITH CONTACT	36	23	41
COMMERCIAL ROBBERY	41	53	6

SOURCE: Sourcebook (1978), Table 3.27.

an important fact that most robbery is not committed by a lone robber, but rather by gangs (or perhaps, teams) of robbers, a pattern that has also been noted and discussed by Cook (in several sources) and by Zimring (1977). There is some evidence that the increasing rate of robbery homicide is at least partly a function of the increasing rate at which robberies are committed by more than one offender.

Other data (see Sourcebook, 1978, Tables 3.33 and 3.37) on incidents involving multiple offenders reveals striking differences in the age distributions of lone vs. multiple offenders. Multiple offenders are far more likely to be young than are lone offenders. As well, victims of multiple offender victimizations are more likely to be young (12-20 years) for all incidents of assault. A few differences by race also emerge: Non-whites are over-represented among multiple offenders in robbery incidents even more than in lone offender robberies. In general, with the exception of robbery, whites are more likely to be victims of multiple offenders than are non-whites, although the difference is not large. For robbery, non-whites are slightly more likely to be victims in incidents involving multiple, than lone, offenders.

Relationship Between Victim and Offender

Table 9-5 shows the proportion of offenses involving strangers over categories of crime type and according to the sex and race of the victim. Data are only for those offenses involving a lone offender. Most offenders are unknown (strangers or known only by sight) to victims, although for non-white females, incidents of attempted aggravated assault with a weapon or with injury, or attempted assault with a

TABLE 9-5  
VICTIM-LONE OFFENDER RELATIONSHIP, 1975 LEAA NATIONAL DATA

<u>Offense/Sex and Race of Victim</u>	<u>Lone Offender</u>	
	<u>% Stranger*</u>	<u>% Non-Stranger</u>
RAPE AND ATTEMPTED RAPE		
White Male	--	--
Non-White Male	--	--
White Female	66%	34%
Non-White Female	--	--
PERSONAL ROBBERY AND ATTEMPTED ROBBERY WITH INJURY		
White Male	84	16
Non-White Male	90	10
White Female	75	25
Non-White Female	81	19
PERSONAL ROBBERY WITHOUT INJURY		
White Male	88	12
Non-White Male	88	12
White Female	87	13
Non-White Female	79	21
ATTEMPTED ROBBERY WITHOUT INJURY		
White Male	87	13
Non-White Male	75	25
White Female	82	18
Non-White Female	--	--
AGGRAVATED ASSAULT WITH INJURY		
White Male	66	34
Non-White Male	61	39
White Female	50	50
Non-White Female	35	65
ATTEMPTED AGGRAVATED ASSAULT WITH WEAPON		
White Male	76	24
Non-White Male	55	45
White Female	59	41
Non-White Female	47	53
SIMPLE ASSAULT WITH INJURY		
White Male	59	41
Non-White Male	58	42
White Female	27	73
Non-White Female	21	79

Table continues next page

Table 9-5 (Continued)

<u>Offense/Sex and Race of Victim</u>	<u>% Stranger*</u>	<u>% Non-Stranger</u>
ATTEMPTED ASSAULT WITHOUT WEAPON		
White Male	65%	35%
Non-White Male	58	42
White Female	55	45
Non-White Female	38	62
PERSONAL LARCENY WITH CONTACT		
White Male	91	9
Non-White Male	70	30
White Female	97	3
Non-White Female	98	2

SOURCE: Sourcebook (1978), Table 3.25.

\* Offender is classified as a stranger if offender was unknown to victim or known to victim only by sight.

-- = Insufficient cases.

weapon, are more likely to involve persons known to them than is true for other sex and race groups. The likelihood of knowing the offender for all groups is greatest for incidents of simple assault and attempted assault without a weapon.

For all types of offenses, slightly higher proportions of non-white victims know the offender than do white victims. Incidents of simple assault with injury show the highest proportions of offenders who are either spouses, ex-spouses, or other family members of victims, while incidents of aggravated assault with injury and attempted assault without a weapon show the highest proportions of offenders who are well-known or are casual acquaintances to victims for both white and non-white victims. Victims are significantly less likely to know their offenders for incidents of completed and attempted personal robbery with and without injury, and for incidents of personal larceny with contact. The general conclusion is that incidents involving actual physical violence more often occur between individuals who know each other, while incidents involving violence or threat of violence and theft more often happen between individuals who are strangers to one another.

Victims and Offenders Compared (Victimization Survey Data)

(1) Personal Robbery. For personal robbery, the majority of lone offenders are perceived to be 21 years or older, while about 30% of victims are less than 20, 40% are 20 to 34 years of age, and about 30% are 35 years or older. Young offenders (perceived age 12-20), who comprise over one-third of all offenders, are more often involved in robbing individuals of their own age. The majority of offenders

of personal robbery (55%) are perceived to be non-white, while the majority of victims are white (75%). White victims are as likely to be robbed by white or non-white offenders, while non-white victims of robbery are far more likely to be robbed by non-white offenders.

(2) Aggravated assault. While non-whites comprise about one-fifth of all victims of aggravated assault, they are over one-third of the perceived offenders. White offenders have as their target white victims in almost all incidents (96%), while non-white offenders are equally associated with white and non-white victims. The perceived age of lone offenders is 21 years or older for 70% of all offenders, while individuals in the younger age group (12-19 years) are victims in about one-third of incidents of aggravated assault. Older victims (35 years or older) comprise about one-fifth of all victims. However, the most likely encounter between victims and offenders is that between victims 20-34 years of age and offenders 21 years or older, a cell that contains 40% of all incidents of aggravated assault committed by a lone offender.

(3) Simple assault. In contrast to aggravated assault, simple assault is more highly associated with white offenders (70% of all incidents involve white offenders). For non-white offenders, victims are twice as likely to be white (18%) than non-white (9%). Whites appear to be more likely to be victims of simple assault (about 90% of victims) than of aggravated assault (about 80% of victims). The age distribution of victims of simple assault is almost identical to that for aggravated assault; however, the age distribution of lone offenders of simple assault is younger than that for aggravated assault:

one-third of offenders are perceived to be 12-20 years of age, while the corresponding proportion for aggravated assault is one-quarter.

(4) Personal larceny with contact. In contrast to incidents of personal robbery, personal larceny with contact is far more associated with younger lone offenders (about one-half of all incidents involve offenders of ages 12-20) and older victims (over one-half of incidents involve victims 35 years or older). The perceived race of offenders in incidents of personal larceny is predominantly non-white (about two-thirds). Victims of personal larceny are more likely to be non-white (one-third) than victims of robbery (just over one-fifth). Where offenders are perceived to be non-white, their victims are slightly more likely to be white, although the proportions of white and non-white victims are roughly the same. Note that this result is in contrast to incidents of personal robbery, where non-white offenders were twice as likely to be associated with white victims. Where the perceived color of the offender is white, over 90% of the victims are also white, a proportion which was identical in incidents of personal robbery.

Some summary remarks on the above patterns are in order. First we note that the incidence of simple and aggravated assault is four times greater (about 2.8 million incidents in 1975 involving a lone offender) than that of personal robbery and personal larceny with contact (about 700,000 incidents involving lone offender). Thus, when we discuss the likelihood of age or racial groups to be victims or offenders in each of the offense categories, we are discussing the probabilities within each offense type, not the overall likelihood of

committing crimes or being victimized by them. This latter topic is discussed in a subsequent section.

The young are most over-represented among offenders in incidents of personal larceny with contact (half of all offenders), and less so in incidents of simple and aggravated assault and personal robbery. The modal age of victims of simple and aggravated assault and personal robbery is 20-34 years of age, while victims of personal larceny are more likely to be in the older age category (57% aged 35 years and older). Offenders aged 21 and over are more likely to be associated with incidents of simple and aggravated assault (65% and 70%, respectively), than they are with incidents of personal robbery and personal larceny with contact (56% and 39%, respectively).

White offenders are more common among incidents of simple and aggravated assault (63% and 71% of all offenders, respectively) than they are with incidents of personal robbery and personal larceny with contact (41% and 29%, respectively). Non-whites are less likely to be victims of simple assault (11%) than they are of aggravated assault or personal robbery (21% and 22%, respectively), and they are most likely to be victims of personal larceny with contact (33%). For all four types of crimes, white offenders are very heavily associated with white victims (over 90%). In contrast, non-white offenders are as likely to have white as non-white victims in incidents of aggravated assault and personal larceny with contact, and are more likely to have white victims (about two-thirds) in incidents of personal robbery and simple assault. Note, however, that for all offense types, non-white victims are consistently most likely to be

victimized by other non-whites (80 to 90% of all non-white victims are robbed or assaulted by other non-whites).

#### A Note on Sex Differences

Hindelang (1979) has analyzed the patterns of victim-offender relationships by sex, with interesting results. In general, as the seriousness of the offense increases, so does the likelihood that the victim and offender will be male. Males predominate as victims and offenders in all offenses, comprising 85-90% of offenders and 60% of victims in less serious incidents, and 92-97% of offenders and 74% of victims in more serious incidents. Offenders tend to victimize members of the same sex: males constitute 70-75% of the victims of male offenders, and females constitute 84-90% of the victims of female offenders in less serious incidents, 71-78% of victims in more serious incidents. In only 1-3% of incidents involving male victims are females the offender. By contrast, for female victims, 65-92% of incidents involve male offenders, with male offenders victimizing females in higher proportions as seriousness increases.

#### Probability of Injury, Victimization and Property Loss

Hindelang, Gottfredson, and Garofalo (1978) utilized LEAA 8-city victimization data collected in 1972 to provide one of the first detailed analyses of the correlates of bodily injury and the types of encounters likely to end in injury to the victim. Their review of the literature using UCR data shows that there is much intra-crime variation in the extent of bodily injury. Past research studying the extent of injury in robbery, using UCR data in selected U.S. cities,

reveals the following. Over a 7-year period in Philadelphia, Normandeau (1968) found that 44% of robbery victims had no injury, 26% had minor injuries, and 30% needed medical or hospital treatment. A similar pattern was seen in a study of Boston robbery victims in 1964 and 1968: 68% of the victims received no injury, 11% experienced minor injury, and 21% received medical or hospital treatment (Hindelang et al., 1978: 36). Sellin and Wolfgang's (1964) analysis of bodily injury concluded that offenses classified as a "simple assault" resulted in more serious physical harm to more victims than did robberies with personal violence. (The former, interestingly, are still classified in the UCR as "less serious" offenses than the latter.)

From the 1972 8-city data, of the estimated 209,000 victimizations, about 25% of the victims suffered some form of injury. "Injury" is defined to include physical injury, such as bruises, broken bones, gunshot wounds, internal injuries, etc., but not psychological injury or mental anguish. Hindelang et al. (1978: Tables 3-1, 3-2) report the types of injuries and their frequencies among those injured. The most common injuries are minor injuries such as bruises, black eyes, cuts, or scratches (78%), followed by "other" injuries (13%), knife or gunshot wounds (8%), broken bones or teeth (7%), and internal injuries or knocked unconscious (7%).

Rape victims are most likely to suffer personal injury (about half), while for robbery, aggravated assault, and simple assault, 20-35% of victims are injured. The most common form of injury is again bruises, black eyes, cuts or scratches for each type of crime, with the exception of victims of rapes who were more likely to be injured

by "rape injuries." Of special note here is that about two-thirds of victims of aggravated assault suffered no injury, the reason being that an offense is classified as an "aggravated assault" if a weapon is present, regardless of whether any bodily injury occurs.

These data again show, as earlier studies have shown, that "simple" assault is actually rather more likely to result in the injury of the victim than is "aggravated assault." As noted, any assault that is accompanied by a weapon is considered an aggravated assault, whether the victim is injured or not. If "serious" offenses were defined, at least in part, by their bodily consequences to the victim, then, by rights, simple assaults would generally have to be included, in which case the proportional involvement of firearms (or other weapons) in serious offenses would be lower than their proportional involvement in what are now considered to be serious (that is, "Index") crimes.

Hindelang and associates undertook several additional analyses of the correlates of victim injury that bear summary here:

(1) Location and time of incident. Little variation is found in rates of injury by the location of the incident, with the exception of incidents occurring in the victim's home. About a third of the incidents occurring in the victim's home resulted in injury. In contrast, victimizations occurring in commercial building or public conveyances result in victim injuries in about 18% of the cases. About half of all personal victimizations occur during the day (6 a.m. to 6 p.m.), 40% occur between 6 p.m. and midnight, and the remainder between midnight and 6 a.m. Victimizations occurring at night result in victim injury in somewhat higher proportions than those during the

daylight hours: 22% of daytime victimizations involve injury, compared to 28% of those during 6 p.m. to midnight, and 32% from midnight to 6 a.m.

(2) Weapon use. Injury is only slightly more likely to occur in incidents involving weapons than those where weapons are absent (30% vs. 24%, respectively). This result is in contrast to Sellin and Wolfgang's (1964) analysis of juvenile victims, wherein they conclude that the presence of a weapon results in serious injury in 72% of incidents, in comparison to 20% of victims who suffer injuries where no weapon is present. Sellin and Wolfgang also found no relationship between type of weapon used and the likelihood of serious injury. By contrast, Hindelang finds that where guns are involved in personal victimizations, 17% of victims suffer injuries; where knives are used, 28% of victims incur injuries; and where other weapons are used (clubs, bottles, wrenches, etc.), over half of victims suffer injuries. Note that where guns are present in incidents, victims have lower rates of injury (17%) than where no weapons are present (24% result in injury). Some similar results specifically for the robbery case are discussed in Chapter 11.

(3) Self-protective measures taken. Hindelang and associates (1978) report that in about half of all personal victimizations, victims take some form of self-protective measure. The most likely type of self-protective measure is physical force (hitting or kicking the offender, 18%), followed by evasive action (14%), trying to get help (yelling or screaming, 7%), resisting without force (arguing, reasoning, 6%), and using a weapon (4%). We note that where victims take

some form of self-protective measure, they are slightly more likely to be injured than when not (29% vs. 21%, respectively); and the type of self-protective measure is importantly related to whether injury is sustained by the victim. For victims who use physical force as a self-protective measure, over half are injured, whereas of those employing evasive action or resisting without force, 15-20% are injured. For those employing a weapon, over one-quarter incur injuries.

(4) Victim-offender relationship. Persons victimized by strangers are somewhat less likely to be injured (23%) than those victimized by non-strangers (35%), largely a function of differences in the kinds of offenses strangers and non-strangers commit (see above).

(5) Offender characteristics. There is little relationship between offender attributes and whether the victim is injured for the 8 cities studied. Victims who perceive offenders to be 21 years or older are no more or less likely to be injured (27% injured) than those who perceive the offender's age to be less than 21 years (26% injured). Victims attacked by female offenders are about as likely to be injured as those attacked by male offenders (30% vs. 25%, respectively). Comparable rates of injury are found for those attacked by white (30%) and non-white offenders (25%). Lastly, neither the number of offenders nor the number of victims is related to injury. For those victims attacked by only one offender, 26% are injured, while 28% of the victims attacked by more than one offender are injured. For victims who are alone while being victimized, 25% suffer injury, while 26% of those not alone incur injury.

(6) Probability of being victimized. Hindelang et al. (1978)

used "predictive attribute analysis" to calculate the probabilities of being victimized for various socio-demographic subgroups, the probabilities of suffering injury, and the probabilities of incurring property losses. Overall the rate of personal victimization for the 8-city sample is 51/1000, ranging from the lowest rate of 30/1000 to the highest of 143/1000 for the 18 classification groups falling into the PAA solution. Lowest rates of victimization are found for single, divorced or separated women, 65 years or older; and the highest rates occur for males, 16-19 years of age, and not in school. The strongest predictor attribute is age: those individuals 16-19 years have a victimization rate of 93/1000, while those not in this age range have a rate of about half this size (47/1000).

In examining the splits for the age group not 16-19 years, the next most important attribute is marital status: those married or widowed are half as likely to be victimized as those single, separated, or divorced (34 vs. 71/1000, respectively). Following marital status, age, sex, and income discriminated among those likely to be victimized, persons over 24 years of age, females, and those with higher incomes being less likely victims. For the younger age group (16-19 year olds), the next most important demographic attribute was sex, with males twice as likely to be victimized as females. Following sex, unemployed females and males not in school are most likely to be victimized. Also of interest is that race is not as strong a predictor as age, sex, marital status, or employment/in-school status.

Overall the rate of victimization which involved personal injury for the 8-city data is 15/1000. Like the overall rate of personal

victimization, the strongest predictor attribute for injury victimization is being young (16-19 year olds): this group has an injury rate over twice as high as other age groups (31/1000 vs. 13/1000). The highest injury victimization rate is found for 16-19 year old males, who are not in school (47/1000). Note too that the injury rate for females of the same age group and also not in school is also relatively high (26/1000), although still only half that for males. By contrast, the lowest injury likelihoods are found for married or widowed persons, over 19 years of age (8/1000), and for 16-19 year olds who are attending school and whose family income is between \$7,500 and \$10,000 (8/1000).

The at-risk population for loss of property differs from that for injury, with a differing hierarchy of predictive attributes. The strongest predictor attribute for victim property or monetary loss is family income: those with family incomes of less than \$3,000 are almost twice as likely to be victimized than individuals in other income categories (31/1000 vs. 18/1000, respectively). Those most likely to suffer a loss are males between the ages of 35 and 49 in the lowest income group (102/1000). For non-whites with incomes greater than \$3,000, and for all individuals with incomes less than \$3,000, there is a similar rate of property loss (26/1000 and 31/1000, respectively). In contrast, whites with incomes greater than \$3,000 were half as likely as non-whites to be victims of property loss (13/1000 vs. 26/1000, respectively). The differences between at-risk categories for property loss vs. all victimizations or victimizations involving injury are that for the former, low total family income and race are central attributes, while for the latter, age, marital status,

employment status, and sex are more salient.

#### Conclusion

Data and analyses reviewed here confirm the common wisdom that crime of all sorts, and violent crime in particular, is most common among young, nonwhite males. As an aside relevant to the themes discussed in Chapter 7, there is no evidence that young nonwhite males are disproportionate firearms owners, relative to the rest of the male population. The higher rates of criminality, and violent criminality, among this group can therefore presumably not be attributed to a disproportionately high ownership of firearms. As noted on several previous occasions, firearms ownership is highest in rural areas, whereas most of the crimes considered in this chapter are most common in the big cities. The data reviewed here confirm a conclusion advanced earlier: that there are vast differences between the "average" violent criminal offender and the "average" gun owner.

Why young non-white males are over-represented in all offender profiles is not hard to understand. Rates of unemployment among young urban black males commonly run to 5 to 10 times the rate for the labor force as a whole. The proportion of them living in families at or below the official poverty line is equally high and disproportionate. Many likewise live in substandard housing in the very worst areas of the urban scene, have limited education (often of inferior quality) and few or no job skills. Perhaps also of some relevance, they are also more likely to come from single-parent (typically female-headed) households, and to come from disproportionately large

families. So far as "conventional" resources are concerned (money, education, employment opportunities, and so on), they have few, or none. That they turn, as a consequence, to various unconventional activities is hardly surprising. Race, sex, and age do not constitute an adequate sociological "theory" of crime and its production, but, as we have shown here, these variables are critical in understanding what might be called the "epidemiology of criminal violence."

The persons who commit violent crimes represent, of course, only a part of the larger story; a second part concerns the means by which violence is committed, and this is the topic of the following chapter.

CHAPTER TEN

FIREARMS USED IN CRIME

What types of firearms are used in criminal violence? To what extent can "crime guns" be identified and separated from those that may be bought and used for legitimate purposes? It is important to address these questions because federal, state, and local firearms regulations are based on assumptions of what constitutes the typical "crime gun" and the "crime gun user". Decisions on the regulation of firearms sales and possession (particularly, for handguns) should theoretically make the distinction between "crime guns" and "crime gun users" versus "others" (i.e., law-abiding citizens using guns for legitimate purposes). The problem of course is that the dividing line is not clear. At best, law enforcement agencies can only react to the illegal possession or use of firearms in violent crime, by arresting individuals for alleged firearms violations or criminal acts and by confiscating and ultimately destroying "crime guns".<sup>1</sup>

It is to the results of this reactive work that we turn in this chapter. Since little information is known about the types of firearms actually used in crimes, the characteristics of confiscated weapons are often used to describe "crime guns". However, confiscated firearms often include all firearms recovered by the police, not just those firearms directly related to a crime. This makes it difficult to clearly identify the typical "crime gun" from these data. In addition, the data on confiscated firearms are quite limited: there are no national statistics on

the number and type of guns police confiscated, the reasons for confiscation, nor a breakdown by the types of firearms associated with particular violent crime incidents (with the exception of homicide). As well, no national data base exists on types of features of guns annually manufactured and imported against which to compare the "crime gun". Lastly, there are no national data on the types and features of guns annually stolen (from either individuals or from manufacturers, importers, wholesalers, retailers or in transit). Little information is known about whether stolen weapons provide a major source of "crime guns".

One potential source of information on "crime guns" would be the National Crime Information Center (NCIC) weapons files. However, Brill (1977) found that the NCIC does not keep a separate count of firearms reported stolen and those confiscated by the police; in any event, departmental reporting of stolen or confiscated firearms may not be consistent or reliable. In the absence of any national data bases for confiscated, stolen, or otherwise labelled "crime guns" and in the absence of any national data on annual production or citizen ownership of types of firearms, we cannot be confident in making claims as to which types of firearms are disproportionately involved in crime.

However, given these limitations, we draw upon a number of studies which have attempted to describe "crime guns" based on samples of firearms confiscated by the police. These are Project Identification (1976), Project 300 (1976), Project CUE (undated), and Brill's (1977) Firearm Abuse. More detailed features of "crime guns" have been analyzed by Zimring (1976) on the age of confiscated firearms. The magnitude of the "crime gun" problem can be estimated, using the National Bureau of

Standards' (1977) survey of police departments' annual number of firearms confiscated and features of these firearms. More tentative and indirect evidence of the types of firearms confiscated can be inferred using ATF's 1975 figures for the types of guns for which trace requests were initiated (Search Group, Inc., 1976). Lastly, Burr's (1977) study of patterns of handgun ownership for a sample of citizens and convicted felons in Florida is reviewed. This study provides a glimpse at the comparative features of "crime guns" and "crime gun users" vs. guns and individuals using them for legitimate purposes.

Magnitude of "Crime Guns" Confiscated -- the NBS Survey

A portion of the National Bureau of Standards' (NBS) 1972 survey of a sample of 440 state, county, and municipal police departments dealt with the numbers and types of firearms confiscated by departments in 1970 and 1971. Using the mean number of weapons confiscated per department and the number of departments, we can derive an estimate of the total weapons confiscated in the U.S. in 1971. As Table 10-1 shows, we estimate in 1971 over 260,000 firearms were confiscated by the nation's police departments. We assume that this estimated firearms confiscation figure does not include the number of firearms confiscated by federal and state ATF agents for violations of federal law, but instead the number of firearms confiscated by the police from individuals using them in incidents or having them in illegal possession. However, this survey did not ask for the circumstances surrounding the confiscation of these firearms. Given that a non-trivial proportion of firearms confiscated may not be associated with any type of criminal violation (Brill, 1977), we cannot be sure that our estimated

TABLE 10-1  
ESTIMATED NUMBER OF CONFISCATED FIREARMS, 1971

<u>HANDGUNS</u>	(1) Mean Number Confiscated Per Department <sup>a</sup>	(2) Number of Departments <sup>b</sup>	Estimated Confiscated Handguns: Column 1 x Column 2
50 Largest Cities	1,449	50	72,450
State	446	50	23,300
City (50 or more officers)	54	554	29,916
City (10-49 officers)	8	1,985	15,880
County	7.5	3,137	23,528
City (1-9 officers)	3	5,486	16,458
Township	1.5	1,574	2,361
		<u>12,836</u>	<u>183,893</u>

Table continued on next page.

TABLE 10-1 (continued)

<u>SHOULDER WEAPONS</u>	(1) Mean Number Confiscated Per Department <sup>a</sup>	(2) Number of Departments <sup>b</sup>	Estimated Confiscated Shoulder Weapons: Column 1 x Column 2
50 Largest Cities	451	50	22,550
State	62	50	3,100
City (50 or more officers)	25	554	13,850
City (10-49 officers)	5	1,985	9,925
County	7	3,137	21,959
City (1-9 officers)	1	5,486	5,486
Township	1	1,574	1,574
		<u>12,836</u>	<u>78,444</u>

<sup>a</sup>Mean is of those departments supplying information.

<sup>b</sup>This is the number of law enforcement agencies identified by LEAA in 1971; distribution of number of departments by type is taken from NBS (1977) Table 1.2-1, p. 3.

SOURCE: NBS (1977), adapted from Tables 1.2-1 and 11A/1A-3, p. 3 and 23.

number of confiscated firearms are, in fact, all "crime guns."<sup>2</sup>

The distribution of total weapons confiscated by type and size of police department can also be estimated from the NBS survey (see Table 10-2). Not unexpectedly, county and township departments (presumably more located in more rural areas) confiscated proportionately fewer handguns (about 60% handguns) than do police departments in the 50 largest cities (where 76% of the firearms confiscated are handguns). Also, not surprisingly, over half of the total number of estimated confiscated firearms were concentrated in the largest departments (5% of the departments in the nation).

The NBS report provides a rough and conservative estimate of the magnitude of firearms annually confiscated; however, it does not show more specific information about the types of firearms, nor their association with particular types of crimes. We turn to ATF's Project Identification, Project 300, and Project CUE, in addition to Brill (1977) to describe the types of firearms typically confiscated by police.

#### ATF Project Identification

The first national study of the types of handguns confiscated by police was carried out by the Bureau of Alcohol, Tobacco and Firearms (ATF, 1976a) during 1973-1975. The initial phase of Project Identification was concerned with identifying the sources of handguns used in street crimes in order "to develop intelligence for ATF and police departments regarding illegal firearms dealers, firearms theft rings, and other suppliers of handguns to criminals" (ATF, 1976a: 3). For this initial phase and three subsequent phases of the Project, a sample of 16 large

TABLE 10-2  
 FEATURES OF CONFISCATED FIREARMS BY DEPARTMENT TYPE

Police Department Type	Estimated Number of Firearms Confiscated in 1971			Handguns % of Total	Total as a % of All Estimated Firearms Confiscated (N = 262,337)
	Handguns	Shoulder Weapons	Total		
50 Largest Cities	72,450	22,550	95,000	76%	36%
State	23,300	3,100	26,400	88%	10
City (50+)	29,916	13,850	43,766	68%	17
City (10-49)	15,880	9,925	25,805	62%	10
County	23,528	21,959	45,487	52%	17
City (1-9)	16,458	5,486	21,944	75%	8
Township	2,361	1,574	3,935	60%	2
	183,893	78,444	262,337	70% (avg.)	100%

metropolitan police departments collected data on all handguns received, recovered, or seized by them for specified periods of time (three or six months).

The departments reported a total of 10,620 handguns of which the ATF trace service successfully traced 7,815 (or 74%). Information regarding the circumstances surrounding the seizure, recovery, or receivership of handguns by the departments was not presented in the report, so again, it is difficult to tell how many handguns are really "crime guns". However, the ATF report notes that "though complete statistics are not available for the specific reasons that police acquired each handgun, a review of the trace forms indicates that many of the weapons were used in street crimes or they were related to 'carrying a concealed weapon' charge" (ATF, 1976a: 10). Brill's (1977) analysis of ten cities finds that perhaps 20-25% of handguns confiscated by the police may not be associated with any criminal violation.

The ATF Project does provide some description of the confiscated handguns. Over half of the handguns were judged to be less than \$50 in value, 70% had barrel lengths of 3" or less, 60% were .32 caliber or less, 76% were revolvers, and 66% were purchased after 1968.

ATF estimated that 45% of the handguns confiscated were "Saturday Night Specials", their definition of this type of handgun being one that costs less than \$50, of caliber .32 or smaller, and having a barrel length or 3" or less. We note, however, that this is an inflated percentage, since it is based on the number of handguns successfully traced. Re-computing the proportion of "Saturday Night Specials" as a percent of all handguns received, we find that 33% of the sample are "Saturday Night

Specials," using ATF's criteria. Further, ATF stated that 624 of the 10,620 firearms confiscated (or 6%) were stolen. This figure was determined by entering the handgun's serial number on the NCIC's computer files of stolen firearms. As we report below, this proportion of stolen handguns probably underestimates the actual proportion of confiscated firearms which are stolen.

In addition to these features of confiscated handguns, two other findings emerge from the study: (1) the source of purchase of the handguns and (2) the state of origin of the handguns. Of all handguns which could be successfully traced, 23% came from pawn or loan shops. A special study of Phase IV cities revealed that of the handguns purchased from pawn or loan shops (25% of the handguns in these cities), about 60% were "Saturday Night Specials", suggesting that these types of businesses may supply a disproportionate share of this type of handgun.

The ATF report found that except for those states having stringent regulations and licensing requirements for the purchase and sale of handguns, the majority of handguns confiscated were purchased in the state where the confiscation occurred. There are large city variations in the proportions of confiscated handguns purchased from other states, ranging from 13% for Dallas and 14% for Dade County to 92% for Detroit and 96% for New York City. Overall, for all handguns confiscated and successfully traced, 57% came from out of state, a proportion that reflects the large number of confiscated handguns (2443) in New York City. If New York City is excluded, 38% of confiscated firearms were purchased interstate. The following states were the major gun sources for the study cities: Florida, Georgia, Ohio, South Carolina, Texas, and Virginia.

One last analysis shown in the ATF report is the estimated "street age" of handguns confiscated. In the Phase II cities (Dallas, Denver, Kansas City, and Oakland), half of the handguns confiscated had a street age of less than 3 years in Dallas, Denver and Oakland, whereas half of confiscated handguns from Kansas City had a street age of 6-7 years.

A problem with this ATF analysis as pointed out by Brill (1977: 94-95) is that two dates were used interchangeably to define the beginning date of "street age": at times, the date at which the handgun was delivered to the first retailer was used; at other times, the date when it was sold to the first purchaser was used. As well, ATF did not keep accurate figures of the date when the handgun was confiscated by the police: at times this end date for "street age" was the date or period of time when the handgun was confiscated; at other times, it was the date or period of time when the handgun was traced by ATF.<sup>3</sup>

#### Critique of Project Identification and Brill's (1977) Firearm Abuse

Some of the results from the ATF study need to be qualified given a variety of methodological problems in tracing handguns from the cities. These problems were uncovered when Brill attempted to re-analyze the ATF data for purposes of making comparisons to his ten study cities in 1974-75.

As the title of the ATF report Project Identification: A Study of Handguns Used in Crime implies, the analyses of handguns are those that are reputedly crime-related. Brill found, however, that due to the ways in which police departments keep records or inventories of "gun confiscations" that one cannot assume that a confiscated gun was involved in a crime. In his ten-city study, Brill estimated that 20-25% of firearms confiscated were not crime weapons. Instead they were either (1) simply

found by the police while on patrol, (2) voluntarily turned in by citizens, or (3) firearms that were owned by police officers who submitted them to the department's property room for safekeeping, testing, or as evidence for pending cases.

Another distinction to be made for these "crime gun" confiscations is the proportion that are associated with illegal possession vs. those that were actually used in violent crimes. Although the ATF study noted that "concealed weapons charges and street crimes" were the reasons that the police acquired the handguns, it did not show the proportions of handguns falling under each of these categories. Brill found in his ten-city study that 50-60% of "crime guns" were those that were confiscated on illegal possession charges. Note, however, that when comparing the features of guns confiscated on illegal possession vs. "street crime" charges (using manufacturer and caliber as comparison categories), Brill found few differences between handguns confiscated for these two types of charge categories. As we report below, data from ATF's Project CUE do show differences between "violent crime guns" and guns involved in other incidents.

Brill notes that the ATF report often refers to confiscated handguns as "street crime" guns, and he attempts to examine this by analyzing confiscation data he collected from 8 of the ten cities. He found that 30-40% of handgun confiscations came from residences; 20-30% from the streets; 15-25%, automobiles; 10-15%, businesses; and 2% from other locations. ATF misleadingly refers to confiscated handguns as street crime guns when this may not be the case.

In his efforts to re-analyze the ATF data, Brill found a number of methodological problems in the study. First, ATF requested that police

departments submitting handguns for tracing not submit those that were "too old to trace." Therefore, some unspecified amount of pre-screening occurred which excluded an unknown number of "old guns" from the ATF study. In addition to pre-screening on the part of the police departments, ATF also screened out some guns. For example, Brill found that the New York City police department submitted 3,320 handgun descriptions for tracing, while ATF said they received 2,931 records.

Second, a proportion of those handguns that ATF was unable to trace were found in re-analysis by Brill to have been stolen. This missing data on thefts held particularly for stolen handguns from manufacturers' factories, for which "records missing" is the reason given for an ATF unsuccessful trace.

Third, Brill found that ATF had duplicated a large number of its traces and counted them twice, when he attempted to re-analyze Project Identification data collected for New York.

Although Brill is somewhat critical of ATF's report, his analysis of handgun confiscations in ten cities during 1974-1975 corroborates most of ATF's findings. Both studies found roughly similar proportions by caliber of handguns confiscated: for ATF this breakdown was 39% of handguns of .32 or greater; for Brill, 45% of handguns were .32 caliber or greater. Both studies concluded that the street age of confiscated handguns is relatively young.

Brill's analysis of confiscated firearms found that 82% were handguns, 11% were shotguns, and 7% were rifles. Proportions of comparable magnitude were found in the NBS survey in 1971 (77% handguns; 23% shoulder weapons) (NBS, 1977: B-17); and in ATF's analysis of types of firearms traced in

1975 (69% handguns; 21% shoulder weapons) (Search Group, Inc., 1976: 10).

Brill's study claims to come to differing conclusions with respect to the "quality" of confiscated guns than ATF's study. In part, the differences between Brill and ATF result from his focus on manufacturers of guns and the inclusion of handguns and shoulder weapons in his analysis. One small difference may also be that Brill used \$60 or less as the criterion for an "inexpensive" firearm.

Our comparison of Brill's and ATF's findings about the quality of confiscated guns reveals small differences, especially given the great imprecision in estimating "value" of guns. Brill finds that of the 5,547 guns confiscated from his ten study cities, 45% were manufactured by ten companies. Of these ten manufacturers, 35% of the guns were manufactured by companies which are predominantly engaged in the manufacture of inexpensive handguns. The remaining 55% of the guns confiscated were manufactured by 60 other companies; and Brill notes that this group of 60 companies, "inexpensive guns appear not to have been any larger a part of this 'other' category" (Brill, 1977: 48).

The ATF proportion of inexpensive handguns (less than \$50) confiscated was 56%, and the percentage of "Saturday Night Specials" was 45% (more correctly, we believe that 33% should be the figure). We find little basis for concluding as Brill does that his results contradict the "widespread notion" (presumably based on the ATF report) "that so-called 'Saturday Night Specials' are the favorite crime weapon." He goes on to state that expensive firearms are found in these samples as often as inexpensive ones -- the same result as was found for the ATF study. We note, however, that the ATF report and Brill both overstate the problem,

ATF saying that a "substantial majority" (i.e., 56%) of handguns used are of low quality (ATF, 1976: 9), while Brill concludes his analysis with "inexpensive handguns are not used as weapons of violent crime any more often than other handguns" (Brill, 1977: 53).

Of particular importance in his analysis is Brill's identification of manufacturers whose firearms are frequently confiscated: Colt, Smith & Wesson, and Harrington & Richardson were represented as the top three manufacturers of firearms confiscated in six of the ten cities. Colt or Smith & Wesson were in the top ranked two manufacturers for all of the cities. This finding leads Brill to conclude that the "firearms market is highly integrated on a nationwide basis and involves a strong flow of interstate commerce," (assuming that confiscations of firearms is a good indicator)(Brill, 1977: 48).

A set of analysis which Brill did not carry out involved the proportions of confiscated firearms which were more easily concealable. Since concealability has been reported to be a major component of "crime guns," this aspect of Brill's analysis is unfortunately incomplete. Brill does present the caliber of confiscated handguns by five major types of crimes, and his results show that smaller caliber handguns (.32 or smaller) were associated more with robberies and assault, while larger caliber handguns were predominantly associated with murder. This result is consistent with Zimring's (1972) analysis of guns implicated as murder weapons and with ATF's Project CUE results.

As a further check on the cost of handguns, Brill did an analysis of 144 firearms confiscated in New York City. Using firearms catalogs to determine retail prices, this analysis showed that 31% of the firearms

retailed for \$60 or less. Obviously, these retail prices might not reflect what a person actually paid for a firearm (for example, it could have been stolen, purchased on the black market, or bought used).

In contrast to ATF's estimate of 6%, Brill believes that 20-25% of confiscated firearms were stolen at some point in their history. This higher proportion is based on a study of New York City firearms confiscated in a one-month period in 1975. The same result is also found in a more intensive study of 300 handguns confiscated as part of Project Identification (termed Project 300). In two very small sample studies of 28 stolen firearms, Brill found that 41% had been stolen less than six months before being confiscated, and that half of the stolen firearms were taken from manufacturers, distributors, retailers, or in transit (Brill, 1977: 106). The same size is too low to feel confident in making any general conclusions; however, these proportions do indicate that the magnitude of the theft is probably non-trivial, and that it may be as prevalent for private individuals as well.

Some corroborative data are provided by the 365 stolen firearms that were part of New York City's Project Identification sample of confiscated firearms, on the source of thefts which were reported to the police. Some 48% were reported stolen from manufacturers, dealers, or in transit; 35% stolen in the course of burglaries and robberies; and the remaining 17% locations were unknown (Brill, 1977: 108). The location of incidents of stolen firearms reported here for New York City may not be typical for other cities insofar as it is very unlikely that individuals not licensed to possess firearms would report them as stolen to the police (in 1975 there were only 28,000 individuals with licenses in New

York City compared to estimates of firearms ownership in the City numbering in the hundreds of thousands).

A national estimate of the annual number of stolen firearms cannot be made with much precision. However, using data from a study of burglaries in Houston during the first quarter of 1976, Brill arrives at an estimate of 275,000 firearms stolen in reported incidents of burglary alone.<sup>4</sup>

One last analysis Brill conducted was a more close examination of New York City confiscated guns for Project Identification in order to determine more about the types of handguns that move in illegal interstate commerce. Brill wondered whether the handguns moving illegally ("black market" firearms) differed from those that were purchased in the same state. Four states which New York police believed were the major sources of black market firearms were analyzed with respect to the manufacturers. Of the 1,364 New York City Project Identification firearms which were successfully traced, 773 (or 57%) were traced to retail purchases in Florida, Georgia, South Carolina, and Virginia. Of those traced to these states, 92% were attributed to ten manufacturers. The differences between this sample (the "black market" sample) and all types of firearms in the ten-city sample is large: far higher proportions of these "black market" firearms were categorized as "inexpensive," i.e., manufactured by companies who largely produce under \$60 firearms. The implication from this analysis is that the black market for firearms may be for inexpensive guns. Yet, while these guns may be less expensive at the point of legal sale, they may not be inexpensive at the point of illegal sale. For example, the New York City police believe that a "black

market" handgun produced by a manufacturer of inexpensive brands would cost about \$100 on the street.

Brill's ten-city analysis extends upon the ATF study by providing suggestive leads for further study, such as the relationships among major firearms manufacturers in the national commerce in firearms, and in the need for the study of the path of stolen firearms and the extent of their use in crime.

Zimring further examined very particular features of handguns confiscated in the ATF Project Identification (Zimring, 1976) by analyzing the "street age" of guns. After outlining the problems with these data (as noted above, pre-screening of guns by police and ATF), he concluded that the interpretation of dramatic proportions of "new guns" as "crime guns" should be qualified since a large share of untraceable guns were manufactured before 1969. Yet, even the most conservative interpretation, fewer than half of all confiscated handguns could have originated before 1969 in 7 of the 8 cities in ATF's "street age" analysis.

#### ATF Project 300

A sample of handguns confiscated during ATF's Project Identification were subject to more close examination to determine how handguns enter criminal channels, and the life history of handguns from the time they are manufactured until their involvement in a crime. These 300 handguns were traced from the first retail sale to the last known owner. Of the 300 handguns, 256 (or 85%) were traced to the first retail purchaser.

The results of ATF Project 300 (1976) show that of the initial 300 handguns, 22% had been stolen at some time in their history, 29% were

identified as "Saturday Night Specials," and 66% were confiscated as a result of a "street crime". Of this latter result, the ATF report does not show what types of incidents are included, and we assume that (given ATF's loose definition of "street crime"), this figure represents both those handguns found to be illegally possessed, as well as those involved in violent crimes. The ATF report found that all the 256 handguns were either traced to or recovered in a state different than that of the first purchase (ATF, 1976b: 13), providing further confirmation that confiscated firearms are involved in some form of interstate commerce.

Of special importance in this study are the significant proportions of first purchasers who had felony convictions (6%) or a criminal arrest record (19%) at the time of purchase. An examination of the 40 first purchasers who used invalid identification at the time of purchase shows that 40% lived outside the state of purchase and 18% were convicted felons. ATF now does not allow retail dealers to accept Social Security cards as the only means of identification for firearms purchasers, since their study revealed that about one-third of the first purchasers using Social Security cards as their sole means of identification used fictitious names.

#### ATF Project CUE

ATF's Concentrated Urban Enforcement project involved a concerted effort of increased ATF manpower and other investigative resources in the cities of Washington, D.C., Chicago, and Boston beginning in February 1976 (for Washington, D.C.) and July 1976 (for Boston and Chicago). The results of CUE through June 1977 are reported here; however, ATF's report on the project (undated) states that investigations are "ongoing".

There are four objectives of CUE: to step up prosecution efforts of federal firearms violations; to investigate and reduce major illegal sources of firearms; to educate dealers and audit their operations in compliance with federal law; and to trace all firearms confiscated in the three cities to determine the types and sources of these firearms and the flow of firearms from first retail purchaser.

Of the 22,072 handguns confiscated, about three-fourths were revolvers, over half had a caliber of .32 or less, three-fourths had a barrel length of 3" or less, with 27% defined as "Saturday Night Specials." Of the 6,290 shoulder weapons confiscated, just over half were shotguns, and about one-third were classified as NFA weapons (i.e., sawed-off shotguns and rifles). The features of the handguns confiscated are similar to those found for Project Identification.

Of note were some differences in types of handguns and shoulder weapons confiscated for the three cities. The estimated value of handguns confiscated in Boston was higher (48% valued over \$100) than in Washington, D.C. and Chicago (36% and 33%, respectively, valued over \$100). Since "value" is one of the criteria in the determination of a "Saturday Night Special," Boston also had proportionately fewer of these types of handguns. As we have seen in our review of data on confiscated firearms, handguns dominate (78%), with sawed-off shoulder weapons comprising 7%, and non-modified shoulder weapons, 15%.

One of the important aspects of the CUE analysis is that it reported the types of firearms associated with particular types of violent crime. One-fifth of the confiscated firearms were associated with violent crime incidents; murder (4% of the firearms), robbery (4%), assault (13%), and

rape (1%). The other 80% of the firearms were associated with "other" incidents; ATF does not provide a more detailed breakdown. Similar proportions of confiscated handguns and shoulder weapons were associated with each of the four types of violent crimes.

For the four crime types, there are large no differences in (1) the type of handgun employed (revolvers are the preferable type, constituting about 77-80% of the violent crime guns), (2) the caliber size (about half are .32 caliber or less), and (3) the barrel length of the handguns (70-74% are 3" or less). Although the handguns involved in rape depart somewhat from the features of handguns employed in the three other violent crime categories, the number of rape handguns is rather low to feel confident of the proportions shown.

While about 22-24% of the handguns involved in the four crimes were consistently valued at \$50-\$100, there were differences by crime type in proportions valued less than \$50, or more than \$100. Murder and rape handguns were more expensive than assault or robbery handguns.

The types of handguns associated with the four violent crimes differ from those lumped into "other incidents", these latter handguns are more likely to be pistols, to have larger calibers and longer barrel lengths; as well, they tend to be of less value. Since we do not know what types of incidents are included in this "other" category, it is difficult to explain these differences.<sup>5</sup>

ATF's report claims that one of the impacts of Operation CUE was to "force the criminal violator to seek alternative, more difficult, sources of supply for firearms used to perpetrate illegal acts," notably in the (1) types of handguns associated with particular violent crimes,

**CONTINUED**

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(2) interstate or intrastate sale of these handguns, and (3) age of handguns confiscated. Except for the latter result, we find little support in the data presented in the ATF CUE report to support the first two claims.

Data are presented in the report for firearms (handguns and shoulder weapons) confiscated during the Pre-CUE period (1976) and during the CUE period (1977). For interstate vs. intrastate sales, there are virtually no differences for the three cities combined: before and during the CUE operation 43% of the firearms confiscated had been purchased interstate and 57% intrastate. However, differences of 1 to 3 percentage points in the direction of more intrastate sales were found for Chicago and Washington, D.C. For Boston, the difference was more dramatic: Pre-CUE 47% interstate; CUE 33% interstate. However, the low number of Boston firearms confiscated makes this a somewhat unreliable proportion.

Differences in the types of handguns were also found. In Washington, D.C. and Chicago, there was a decrease of 3 percentage points in the proportion of handguns .32 caliber or less, and a decrease of 1 percentage point in handguns having barrel lengths of 3" or less; in contrast, for Boston, there was an increase of 5 percentage points in handguns of .32 caliber or less, and a decrease of 8 percentage points in handguns with barrel lengths of 3" or less. Pre-CUE to CUE to handguns confiscations for the three cities also showed mixed results in "value" less than \$50: for Washington, D.C. from 44% to 47%; in Chicago, from 44% to 42%; and in Boston, from 29% to 36%.

The analysis of the age differences in Pre-CUE and CUE handguns is a little more consistent. Overall, some 55% of confiscated Pre-CUE handguns

had a "street life" of 3 years or less, compared to 47% of CUE handguns. These overall changes mask larger differences for Boston and Washington, D.C. (since the number of Chicago handguns is so much larger than the two other cities, its handguns predominate in the overall proportions). For Washington, D.C., 48% of Pre-CUE handguns had a street life of 3 years or less, compared to 35% of CUE handguns. Similarly, for Boston, the Pre-CUE and CUE handguns change from 42% to 15% of handguns with a street life of 3 years or less. "Age" or "street life" of handguns refers to the time span between first retail sale and police confiscation; recall that past ATF methods on this question has been less than satisfactory.

We do note that the Pre-CUE proportions of handguns less than 3 years are very similar to those found for the "street age" of handguns confiscated in Dallas, Denver, and Oakland in Project Identification. Thus, available data seem to point to about half of confiscated handguns having a "street life" of 3 years or less.

The last ATF CUE analysis shows the magnitude of the interstate flow of confiscated firearms where handguns are significantly more likely than longguns to be purchased outside of the state in which they were confiscated. Some 40% of handguns confiscated in Chicago and 48% of those confiscated in Boston were purchased outside the state. Moreover, in an analysis of all firearms confiscated by whether they were purchased inside or outside city jurisdictions, one sees even more dramatic differences. The proportions of confiscated firearms purchased outside city jurisdictions are 92% for Chicago, 81% for Washington, D.C., and 67% for Boston.

The effects of the CUE operation seem to have been the most dramatic for the types of firearms confiscated in Boston, while it had some effect

in Washington, D.C., and little effect in Chicago. Although the inference made from the ATF CUE report is that it may have become more difficult for the "criminal element" to obtain the "preferred criminal firearm," it may be that the supply of potential crime guns remained constant, but shifted to a stock of slightly older firearms, and in Boston, those purchased intrastate.

#### Burr's Study of Florida Citizens and Convicted Felons

As we have seen in this chapter, there is little direct evidence of the comparison of handguns owned by legitimate owners vs. those associated as "crime guns". It would be misleading to infer much from the types of guns purchased legally by analyzing trends in applications or permits to purchase, or dealers sales in any one jurisdiction, since 40-50% of handguns confiscated are those purchased in another state, or involved in some form of illegal interstate firearms commerce. In addition, the use of confiscated firearms to describe "crime guns" is problematic, as discussed above.

For these reasons, a study conducted by D.E.S. Burr offers some suggestive leads on the question of "crime guns" vs. those owned for legitimate purposes. Burr interviewed a sample of 808 Florida households and a sample of 277 convicted felons in five corrections institutions in Florida during 1977 in an attempt to discern differences in the types of handguns owned, how individuals in both groups came to possess them, and their reasons for owning handguns.

About 45% of Burr's Florida households acknowledged that they owned one or more handguns at the time of the interview, a proportion that is somewhat higher than the average handgun ownership for the South in 1976

(see Chapter 5). Burr believes that a significant proportion of the interviewees were reluctant to admit owning a handgun. Of the 363 households admitting ownership, 304 gave the number of handguns owned: over 60% said they owned one handgun; 18%, two handguns; 8%, three handguns, and 11%, four or more. The features of the Florida resident and felon handguns, sources of these handguns, reasons for purchase, frequency and reasons for carrying handguns away from home, and manner of disposal are shown in Table 10-3.

Some striking differences are found when comparing the features of handguns owned by each group. Although there are not large differences between both groups in the ownership of handguns of caliber .32 or smaller, higher proportions of Florida residents own .22 caliber handguns than did the felons. Barrel length, however, shows more differences: two-thirds of the inmates compared to 30% of Florida residents said their handguns had barrel lengths of 3" or less. As well, Florida residents paid more money in purchasing their handguns: Burr estimated that the average cost of a used handgun to the residents was \$90, compared to an average \$35 paid by inmates for a private purchase. Burr learned in interviews with the inmates that it was often stated that a used handgun could be purchased on the street in any area of Florida for about \$20 (Burr, 1977: 22).

These differences in cost can be understood, in part, by the differing sources by which Florida residents and inmates got their handguns. Some 49% of residents purchased their handguns from a retail dealer or a pawn shop, compared to 26% of inmates who purchased their handguns by this method. The majority of inmates got their handguns either by private party sales (34%) or by theft (23%).

TABLE 10-3  
FEATURES OF HANDGUNS OWNED BY FLORIDA RESIDENTS  
AND CONVICTED FELONS

Caliber	Residents	Felons
.22	29%	18%
.25	5	7
.32	9	20
.38	28	31
.45	13	2
Other	16	16
No Answer	--	6
	100%	100%
	(511 handguns)	(176 handguns)
<u>Barrel Length</u>		
2" or less	19%	21%
2.1 - 3"	11	46
3.1 - 4"	30	10
4" or more	40	23
	100%	100%
	(437 handguns)	(132 handguns)
<u>Source of Handgun</u>		
Retail Dealer	43%	24%
Pawn Shop	6	2
Private Party	16	34
Gift	15	5
Exchange or Trade	7	1
Borrowed/Found	3	4
Stolen	1	23
Other	10	7 (NA)
	100%	100%
	(433 handguns)	(176 handguns)

Table continued on next page.

TABLE 10-3 (continued)

Manner of Disposal	Residents	Felons
Sold Dealer or Fence	9%	6%
Sold Private	37	*
Sold Non-Stranger	*	64
Sold Stranger	*	15
Traded	11	*
Pawned	2	6
Stolen	10	*
Gave as Gift	16	*
Other	15	9
	100%	100%
	(333 handguns)	

Cost of Handgun	Residents		Felons <sup>c</sup>	
	Mean	N		
Purchased New	\$130	(246)	Public Purchase	\$70
Purchased Used	\$ 90	(204)	Private Purchase	\$35

Reason for Purchase<sup>a</sup> -- Resident Sample

	N	% (of 363)
Protection	198	54
Hunting	63	17
Job Requirement	28	8
Gun Collector	31	8
Target Practice	94	26
Other	46	13
	460	

Table continued on next page.

TABLE 10-3 (continued)

Reason for Purchase<sup>b</sup> -- Felon Sample

Protection	60
Hunting	3
Job Requirement	6
Gun Collector	2
Target Practice	6
For Use in Felony	9
Other	11
No Response	5
	<hr/>
	102

Glisson Amendment (mandatory sentence of 3 years to life for the commission of specific felony offenses)

		<u>% of 277</u>
Inmates aware of the Amendment	229	83%
Inmates indicated that they would not be deterred by the Amendment (i.e., would continue to carry a handgun)	203	73%

69% of first offenders and 76% of multiple felon offenders stated that they would continue to carry a handgun.

\*Category not used.

<sup>a</sup>%'s add to more than 100 because more than one reason was given.

<sup>b</sup>Burr does not show the real base N for these responses; although he computes the %'s with 102 as the base it is likely that more than one reason was given by the inmates.

<sup>c</sup>Base N's for these costs were not provided by Burr.

One important result of the means of handgun disposal was that 10% of the Florida residents indicated that their handguns had been stolen. Burr found in his interviews with the inmates, specifically those who had been convicted of breaking and entering, that handguns were often the most desirable merchandise other than cash, since a handgun is easier to carry unnoticed from the premises, easier to dispose of for cash, and harder to trace than any other merchandise (Burr, 1977: 22). We note that very high proportions of each group tend to sell handguns through private transactions (over 90% of each group), thus diverting the handguns out of federal or state control.

Majorities of individuals in both groups said that the primary reason for owning or carrying a handgun is for protection, although Florida residents indicated more often that hunting and target practices were reasons they owned handguns. Significantly, about 33% of Florida residents said they carried handguns away from home on a daily basis, although only 14% said they needed their handguns as part of their jobs.

The Glisson Amendment, a law which stipulates a mandatory sentence of 3 years to life for the commission of specific felony offenses in which a handgun is used was enacted in Florida to deter the use of firearms in violent crime. Burr found that while most of the Florida inmates knew of the Amendment, about 75% would not be deterred by it; that is, they would continue to carry handguns on their person upon release from prison.

This study then reveals that two factors distinguish handguns owned by legitimate users vs. those that were owned and used by convicted felons: concealability of handguns (inmates preferring smaller barrel lengths) and cost of handguns (inmates paying much less for their handguns

or getting them by theft). Caliber size per se is not a salient criterion in determining legitimate vs. offender ownership of handguns. Stolen handguns constitute a significant source for offenders' handguns (20%), while 10% of residents have had their handguns stolen.

#### Summary

Our review of the available information on confiscated firearms provides some rough indication of the features of illegal firearms. However, the use of confiscated weapons to characterize "crime guns" is problematic because many confiscated guns are involved in no criminal activity and of those "crime guns", a majority are illegal possession charges. In addition, there is no available data on the characteristics of firearms owned by legitimate owners against which to compare. Thus, it is difficult to conclude that there is a particular "crime gun" type which is more likely to be preferred by those involved in violent crime.

However, our review of the confiscated studies does provide some description of handguns confiscated by the police and perhaps some glimpse at "crime gun" types. Of the handguns confiscated in the studies we reviewed, 71-74% had barrel lengths of 3" or less. The ATF CUE study also showed that 34% of the shoulder weapons confiscated had been modified to shorter barrel lengths. Caliber of handguns does not appear to distinguish guns owned by convicted felons and Florida residents (45% and 43%, respectively, owned handguns of .32 caliber or less), although higher proportions of confiscated handguns in the other studies had calibers of .32 or less (53-61%).

"Value" as a criterion proves very difficult to analyze, since the price paid for a gun eventually used for criminal purposes can be low

(as in Florida) or high (as in New York City), depending on the degree to which the supply and demand for "black market" guns fluctuates in any jurisdiction. From the available studies, it appears that 40-50% of handguns confiscated have a "value" of \$50 or less. We do not know, however, the proportion of all handguns manufactured which may also fall into this "inexpensive" category.

Overall, a large proportion of all handguns confiscated have crossed state lines, but interstate sales proportions may be dependent on the degree to which local or state laws are more or less restrictive on the sale and possession of handguns. However, without comparable data on the interstate flow of all firearms, it is difficult to judge the source of guns for criminals in comparison to the source of guns for all owners.

Stolen handguns contribute an important source of confiscated handguns; based on 1975 statistics, perhaps as many as 275,000 handguns are stolen from legitimate handgun owners. Thefts from manufacturers, importers, dealers, etc. also constitute a significant proportion of stolen handguns; in New York City, such thefts accounted for half of all reported firearms thefts in 1973. The current information on stolen firearms is derived from official statistics where the gun owner has reported the gun theft. It is probable that the gun theft problem is much higher, given that many gun thefts may be unreported because of illegal possession. However, regardless of the exact magnitude of the firearm theft problem, it is not known whether all stolen guns become "crime guns" or whether they should be thought of as all other stolen property (that is, the guns are fenced or sold to the general private firearms market). It is an undetermined question whether the proportion of stolen firearms among criminals is any higher than the proportion among the legitimate private firearms owners.

Our analysis of the ATF CUE data reveals that of all firearms confiscated during 1976 and 1977 in Washington, D.C., Chicago, and Boston, about 20% were associated with incidents of violent crime and constitute a small proportion of all guns confiscated by the police. The features of guns used in these violent crimes were different from those confiscated in "other" incidents, specifically violent crime guns tended to cost more and to be of shorter barrel length. With respect to caliber, violent crime guns tended to be of larger caliber (with the exception of rape) than handguns associated with "other" incidents. Using caliber, barrel length, and "value" of handguns, we find from these confiscation studies that "Saturday Night Specials" appear in confiscated handgun samples on the order of 25 to 33%.

Although it appears that age of confiscated handguns is "young" (about one-half of handguns confiscated have a street life of 3 years or less), there are no comparable data on all private handguns to determine if a similar proportion are also "young". However, given the large increases in firearms production over the past decade, we might also assume that the age of handguns in legitimate hands is also "young".

FOOTNOTES

1. To be sure, some proactive work is carried out by ATF federal and state agents. See Chapter 14 for the results of ATF arrests and convictions on violations of federal law.
2. Our estimate may also contain some error due to the response rate to the NBS survey. However, overall, 74% and 82% of the sampled departments did provide information for the number of shoulder weapons and handguns confiscated, respectively.
3. Brill asked ATF officials if they could provide more accurate information on the "end date" for confiscated handguns, but they could not. Indeed, one problem with the ATF report is that information on the study cities is inaccurate at times. For example, the report shows that New York City handguns were confiscated from July to December 1973; however, Brill found that the handguns were actually confiscated during January to July of 1973. ATF apparently recorded the time during which they traced the gun as the time at which it was confiscated, a mistake which ATF officials admitted may have been made in other cities as well (Brill, 1977: 95).
4. Brill acknowledges that Houston may be atypical insofar as it probably has a higher firearms ownership rate than other urban areas. On the other hand, its reported burglary rate is relatively low. Houston's data may provide an accurate indicator of the number of reported firearms stolen since there are no restrictions against having firearms in the home; thus, stolen firearms may more likely be reported to the police (Brill, 1977: 105).

5. We might assume that the bulk of these firearms were associated with illegal possession, but they may also be guns which were recovered in the course of arrests made of gun runners, fences, and others in the business of dealing in "black market" firearms.

CHAPTER ELEVEN

ON THE MATTER OF CRIMINAL MOTIVATIONS

One of the most persistent debates in the "weapons and crime" literature concerns an issue involving criminal motivations, and that is whether restrictions in the availability of firearms would cause the number of violent crimes to decrease. As we have already noted, it is self-evident that if there were no guns, then no crimes could be committed with them. But a wide range of alternative weaponry would remain. Would the persons who presently kill, rob, and assault with firearms not, in a "no guns" condition, simply substitute some other weapon instead? And if so, then what would be the effect? Would death, injury, and destruction resulting from violent crimes or the number of crimes themselves increase, decrease, or remain the same?<sup>1</sup>

For a variety of reasons, the answers to these questions turn, mainly if not entirely, on the motivations that underlie violent criminal attacks. It should be understood that the discussion in this chapter refers to motivation in a psychological, rather than a legal, sense. The law recognizes rather fine gradations of motive: premeditated homicide, unpremeditated homicide, negligent manslaughter, non-negligent manslaughter, and so on. From a legal point of view, the strong intention to kill could be formed only seconds before the attack and would still be considered a premeditated homicide. The distinction we draw in this chapter is altogether insensitive to various legal niceties. It is the distinction between whether the perpetrator wanted to kill the victim (however long that desire had been in existence), to which we refer as an a priori intent to kill, or whether the death of the victim was an unwanted and

unforseen outcome of the perpetrator's behaviors, a function of the "heat of the moment" and the availability of a suitable weapon. We are thus speaking of the psychological matter of differential intentions, and not to the more technical matter of legal culpability.

In this connection, Wolfgang (1958) has developed what is called the "weapon substitution" hypothesis. The hypothesis posits that the initial intent of the offender determines the choice of weapon. When the a priori intention is indeed to kill, firearms are chosen; when the a priori intention is not to kill, some other weapon will be chosen instead.

An implication is that the disproportionate lethality of firearms attacks (relative to attacks with any other weapon) is a spurious artifact of initial offender intentions.<sup>2</sup> It is true, in other words, that gun attacks are more likely than any other kind of attack to end in the death of the victim. (Evidence on this point is reviewed later in the chapter.) But this is true, Wolfgang argues, only because the willful murderer prefers firearms over other weapons. If a firearm were not available, then some other weapon would be substituted with equally lethal results. Thus, "it is the contention of this observer that few homicides due to shooting could be avoided merely if a firearm were not immediately present, and that the offender would select some other weapon to achieve the same destructive goal" (Wolfgang, 1958: 83). The ready availability of firearms, in short, is a convenience to the intentional murderer, but certainly no necessity; death by homicide would be just as common, in this view, whether firearms were readily available or not. An additional implication is thus that reductions in the availability of firearms would probably not have much effect on the homicide rate.

There is, without question, at least some class of homicides for which the "weapons substitution" argument is valid. Persons with a single-minded, thoroughly premeditated intention to kill will always find the means to do so, and if an efficient weapon such as a firearm is not around, the victim can always be poisoned, burned, stabbed, or, if all else fails, beaten to death with a stick. It is obvious that homicides of this sort will not be prevented or even modestly deterred by any kind of firearms legislation, or, for that matter, any other kind of legislation. There are simply too many objects in the world that can serve the purpose of destroying another human being.

The serious question, then, is not whether such a class of homicides exists, but whether this constitutes a large or small proportion of the total class of all homicides committed. If the proportion of homicides resulting from a single-minded intent to kill is very large, then there is probably very little that could be done to prevent them. If, on the other hand, the proportional contribution of willful killings to the total is very small, then different implications follow. What, then, is the distribution of intentions among homicide offenders?

For a variety of reasons, this has proven to be an exceptionally difficult question to answer. Data generated through the criminal justice system are, in themselves, of little help, since the prosecution of a homicide as first-, second-, or third-degree, or as a manslaughter, depends more on plea-bargaining, the strength of the evidence, and other extraneous considerations than it does on determining what the offender

had in mind when the incident began. There is also the problem of inter-subjectivity, since the issue here turns entirely on determining the mental states of offenders at some time prior to their offense. Even in the best of circumstances, mental states are notoriously difficult to assess, and assessing the motives and intentions of murderers is assuredly not the best of circumstances. Even if the homicide did result from an unambiguous and single-minded prior intention to kill, it would be very much in the interests of the offender (and his attorney) to suppress this information.

Most efforts to assess the intentionality of homicides therefore attempt to infer intentions from the objective circumstances surrounding the incident. Probably the most widely-cited and emulated effort along these lines is due to Zimring (1968a), who poses the critical issue as follows:

If all homicides resulted from such a single-minded intention to kill as gangland killings, laws prohibiting firearms would not have a substantial effect on homicide. (...) But not all homicides are so unambiguously motivated. The question is: Do a significant proportion of homicides result from a less deliberate and determined intention? If this question may be answered in the affirmative, and if the probable substitute for firearms in these situations is less likely to lead to death, then the elimination of guns would reduce the number of homicides (1968a: 721-722).

It must be granted that common sense and much episodic evidence seem strongly to favor Zimring's position. The daily newspapers and the "pro-control" literature are rife with accounts of homicides resulting from the most unimaginably trivial incidents - shoot-outs between two motorists over a dispute about positions in the gasoline line, a man shooting his wife to death because his supper was not quite up to

expectation, a homicide that results from a dispute over a borrowed cigarette, a teenager who blasts his mother with a shotgun because he was denied the use of the family car for the evening, etc. In the face of these kinds of incidents, it is very hard to doubt that some large fraction of all homicide results from very little thought or advance planning, that the etiology of these events evolves very much from momentary passions or the heat of circumstances, and that such incidents ultimately turn lethal not so much because anyone intended them to be, but simply because the weaponry at hand, a gun, is intrinsically lethal. That these kinds of incidents would be much less likely to result in death if the participants did not have access to firearms seems, on the surface, at least, as firm a conclusion as anything could possibly be.

On the other hand, that such incidents occur tells us nothing about their relative frequency. People shooting one another to death over trivialities surely makes for good newspaper copy, and so these incidents tend to receive much publicity, perhaps more than their relative numbers would justify. Here, as in all other areas of public policy, episodic evidence and "common sense" are poor substitutes for serious scientific research. So, while we may grant that this episodic evidence seems strongly to favor Zimring's position, we must also ask whether the same applies to the more credible scientific evidence that he and other researchers have assembled.

Several items of evidence from the City of Chicago for the middle 1960's convince Zimring that "a significant proportion (of homicides) do not result from an attack committed with a single-minded in-

tention to kill" (1968a: 724). First, Zimring presents data on the relationship between victims and offenders in 554 homicide cases. In just over two-thirds of the cases, victims and offenders were friends, acquaintances, spouses, lovers, or otherwise related by family or conjugal ties. In an additional six percent of the cases, the victims were neighbors or business associates of the offenders. Victims and offenders were found to have no relationship to one another in only 22% of the homicides in the sample; in the remaining cases, the victim-offender relationship was undetermined. Thus, the large majority of all homicides involve persons known to one another prior to the attack.

That most homicides (and aggravated assaults) involve persons known to each other has been widely reported in all studies. For example, data from 17 American cities reported by Curtis (1974) showed that only 16% of all homicides, and 21% of all aggravated assaults, involve outright strangers; these figures increase somewhat if incidents involving police officers are added in (to 17% and 31%, respectively). In either case, the evidence is broadly consistent with Zimring's Chicago results. Zimring's results have also been replicated in a large number of single-city U.S. studies, and seem also to hold in most other nations for which data are available (Curtis, 1974). We may thus take it as established that most violent assaults committed in the world, whether ultimately lethal or not, involve persons sharing some interpersonal knowledge or relationship prior to the assault.

But what can be inferred about motivations or intentions from this fact? The inference Zimring draws is that lethal attacks on family, friends, and acquaintances are not likely to involve single-minded, a

priori intentions to kill, or to rephrase, that most of these homicides result from escalations of otherwise petty and trivial quarrels that turn lethal just because firearms are available. But there is nothing in the victim-offender relationship data per se to suggest such a conclusion. Strictly, the data tell us who gets murdered, but not why; the imputation of motive is just that - an imputation that is not directly demonstrated in these data.<sup>3</sup>

That most homicides involve members of interpersonal relationships is, in itself, not inconsistent with a high level of prior intent. On the contrary, it seems likely that it would be much easier to work up an unambiguous hatred and subsequently lethal intention about someone known intimately than about an utter stranger. Then too, the fact that two persons are known to each other assuredly does not mean that they are on mutually friendly terms. In the usual run of things, one knows one's enemies at least as well as one knows one's friends. It might even be argued that the notion of prior planning and intent to bring about the destruction of someone with whom one had no relationship at all itself borders on the inconceivable; typically, the only people one might have any reason to kill would be family, friends, and acquaintances. So the evidence on victim-offender relationships, while obviously of great interest in its own right, actually says very little about the motivations underlying homicide.

There is a second problem with these data, one that involves the matter of a comparison standard. Crudely, the available data suggest that about three-quarters of all homicides involve persons known to each other prior to the attack. With what should this three-quarters figure

be compared? Although we know of no evidence, it is a reasonable bet that some equally high proportion of all interactions that take place between human beings involve persons known to each other prior to the interaction, in which case the 75% figure would be neither higher nor lower than what one would expect just on chance alone.

Zimring presents a second tabulation of evidence from police reports concerning the general circumstances surrounding homicide; these data are reproduced below as Table 11-1. Zimring's comments about the table and its implications are as follows: "82% of the homicides in Chicago in 1967 occurred as the result of altercations - domestic, money, liquor - precisely the situation where the intention is more apt to be ambiguous rather than single-minded" (1968a: 729).<sup>4</sup>

This conclusion also does not follow from the evidence presented. The evidence does indeed show, first, that 82% of these homicides were accompanied by an "altercation," however the police define this term. What this seems to mean is that most homicides occur in an atmosphere of interpersonal hostility or animosity between the parties, hardly a startling finding. But all the data show is that 82% of these homicides were accompanied by an altercation, certainly not that 82% occurred as a result of altercations. These altercations, that is, might only be superficial and uninteresting sequela of a single-minded intention to kill.

The 82% figure is also somewhat misleading. The examples mentioned in his text, "domestic, money, liquor," collectively account for only a third of the homicides. By far the largest category shown is "other," which accounts for 38% of all homicides and nearly half of those involving

TABLE 11-1  
CIRCUMSTANCES SURROUNDING 551 CHICAGO HOMICIDES IN 1967

<u>Altercations</u>	<u>%</u>	
General Domestic	17	} 82%
Money	9	
Liquor	7	
Sex	2	
Triangle	6	
Racial	1	
Children	2	} 18%
Other	38	
<u>Teen Gang Disputes</u>	3	
<u>Robbery</u>	12	} 18%
<u>Other Motive</u>	3	

Source: Zimring, 1968a: Table 2.

altercations. Therefore, one could conclude from these data that most homicides do not involve altercations over domestic affairs, money, or liquor; in fact, that no more than about a third can be described in this fashion. The implications of the table for the point at issue would therefore seem to depend almost entirely on what those "other" altercations involve, and on this point the data are mute.

Finally, there is nothing in these data to show that homicides accompanied by altercations over domestic affairs, money, or liquor (or any other "passion") are not also frequently accompanied by determined intentions to kill. These altercations, that is, may only represent the presenting opportunity or context in which to actualize homicidal intentions. That such homicides reflect ambiguous rather than willful intentions is itself only an untested assumption.

A third line of evidence said to favor the "ambiguous intentions" hypothesis involves comparisons between homicide victims and victims of aggravated assault. His hypothesis implies that most homicides begin as aggravated assaults and end as homicides only because the means chosen or available for assault tend to be lethal. The further implication is thus that homicides and aggravated assaults should differ only in outcome and in no other way. In this context, Zimring reports that "victims of homicides and victims of serious assaults are distributed quite similarly by race and sex among the population and differ substantially in these characteristics from the Chicago population as a whole" (1968a: 723). "The consistent similarity between homicide and assault across all variables reported in this volume" is also cited by Curtis (1974: 108) as evidence favoring the "ambiguous intentions"

hypothesis; see also Block (1977) and Vinson (1974).

Both Zimring and Curtis demonstrate, quite unambiguously, that black males are much more likely to be victims of (and offenders in) both homicides and aggravated assaults than are black females or non-blacks of either sex. But here again, nothing of direct relevance to the "ambiguous intentions" hypothesis follows. Zimring, Curtis, and others have demonstrated that homicides and serious assaults are similar in at least one important respect (namely, the race and sex of the victims), but not that they are similar in any respect relevant to hypotheses about underlying motivations.

There are two final pieces of evidence presented by Zimring in behalf of the "ambiguous intentions" hypothesis, neither especially compelling. The first is that "only 30% of the victims of fatal gunshot attacks in 1967 were wounded by more than one shot." Apparently, the point here is that most murderers fire once, come to their senses, and fire no more, but this is, at best, a remote inference from the evidence. In any case, it is very difficult to see what the finding implies about the motivations of the people doing the shooting. One thing it might imply is that most murderers stop shooting once it is clear that the victim is dead. If one were to assume, not unreasonably, that pumping a dead body full of additional holes is the sort of behavior that results from enraged passions, then the finding that "only 30%" were wounded more than once might be interpreted as evidence that most of these homicides do not involve enraged passions, just the opposite of what Zimring concludes. Unfortunately, the data do not contain any information on the number of rounds fired per homicide, only the number that hit the

mark. But the data do at least suggest that a large fraction of murders involve one and only one shot -- a level of marksmanship that one would probably not expect under conditions of outrage or momentary duress.<sup>5</sup>

"Finally, in 54% of the situations which led to homicide in 1967, the police noted that the offender or the victim or both had been drinking [alcohol] prior to the homicidal attack" (1968a: 723). The suggestion here is that perhaps half of all homicides involve drunkenness on the part of one or both parties. But again, this is not a very revealing finding. First, with what should the 54% be compared? Zimring's data show that most (59% and 61%, respectively) homicide and assault victims are black males. It seems reasonable that they tend to be young black males; one may also safely assume that rates of unemployment among this group are quite high. What, then, is the probability that a young, unemployed, black male picked at random from the streets of Chicago will have had one or more drinks (or will have consumed some other intoxicant) at some point say, in the preceding few hours? If this probability were anywhere close to 50%, then Zimring's finding would imply essentially nothing about the relationship between homicide and alcohol abuse. And even if it could be shown that drunkenness among murderers was substantially higher than the average drunkenness among the population from which the class of murderers is drawn, there would still be no straightforward implication about underlying motivations. Drinking to work up the courage to do that which one has already decided to do is not exactly unheard of.

The point to be made here is not that most homicides involve willful and determined a priori intentions to kill. The only point

is that the evidence assembled by Zimring is not adequate to rule this possibility out. The conclusion drawn by Zimring from these data, that "most homicide is not the result of a single-minded intention to kill at any cost" (1972: 97), may very well be correct, but it is not warranted by these data alone.

What of the second explicit premise in Zimring's argument, that the "probable substitute for firearms in these [homicidal] situations is less likely to lead to death?"<sup>6</sup> Zimring makes a reasonable case that the probable substitute weapon of choice would be knives, and we see no good reason to quarrel with this assumption.<sup>7</sup> In the Chicago data, knife attacks (irrespective of lethality) are some three times more common than firearms attacks anyway, and assaults with other forms of weaponry, hands and feet included, are comparatively rare. Results for 17 U.S. cities reported by Curtis (1974: Table 6-1) show somewhat, but not sharply, different results. In the Curtis sample of aggravated assaults, knives outnumber firearms by about two to one (vs. about three to one in Zimring's Chicago data), and Curtis' data also show a substantially higher proportion of assaults with the hands and feet. These modest differences between the Zimring and Curtis results, however, are probably not very significant, least of all in respect to their possible implications for the choice of a substitute weapon in the case where a firearm were not available. So let us assume, following Zimring, that in the absence of firearms, the assaults now committed with firearms would instead be committed with knives. To what conclusion does this assumption lead?

The available data on the comparative lethality of gun and

knife attacks are relatively unambiguous: attacks with guns result in death more commonly than attacks with knives. In Zimring's Chicago data, there were, all told, some 16,518 knife assaults (homicides and aggravated assaults combined) between 1965 and 1967, of which 391 were fatal. The fatality rate among knife attacks is therefore roughly  $391/16,518 = 2.4\%$ . In the same period, there were 6,360 gun assaults, of which 777 were fatal, for a fatality rate among gun attacks of 12.2%. The fatality rate for firearms attacks is thus some five times the rate for knife attacks. This 5:1 differential lethality estimate is rather higher than other estimates reported elsewhere. For example, recalculations from Curtis' data (1974: Table 6-1) suggest that gun attacks are no more than about twice as lethal as knife attacks; data from Australia reported by Vinson (1974) suggest a differential of about three to one.<sup>8</sup> No study, however, reports that knife attacks are more lethal than gun attacks, so we may take it as established that attacks with guns lead to the death of the victim more often than attacks with knives.<sup>9</sup>

What can be concluded from this fact? Zimring's conclusion is straightforward. "These figures," he says, "support the inference that if knives were substituted for guns, the homicide rate would drop significantly" (1968: 728). But the data, of course, do not show this at all. What the data do show is that the people who presently attack with guns bring death to their victims more frequently than do the people who presently attack with knives. That the people who now attack with guns would bring about less death if only knives were available would therefore follow only if the people who now attack

with guns were no more likely to attack with an a priori intent to kill than are the people who now attack with knives, or in other words, only if Zimring's "ambiguous intentions" hypothesis were confirmed. But this hypothesis, as we have already said, is not confirmed in Zimring's (or, so far as we can tell, anybody else's) data. Wolfgang's initial hypothesis, the hypothesis Zimring wants to reject, is that persons select differential weaponry on the basis of their prior intentions. If the firearms murderers did not have a firearm handy, Wolfgang would counter, then they would choose some less efficient but equally effective means with which to accomplish the job. One reading of the comparative lethality data is thus that persons who attack with a knife are less intent on killing, and therefore kill less, than persons who attack with a gun, and this reading of the evidence is obviously consistent with Wolfgang's initial hypothesis.

Whether rates of death from assault would decrease if knives were substituted for guns therefore again turns on the question whether knife attackers are motivated differently than gun attackers -- whether, in Zimring's words, "the people who make homicidal attacks with firearms are radically different from those who make homicidal attacks with other weapons" (1968a: 726). To show that they are not "radically different," Zimring reports two additional bits of information: (i) that, in general, knife killings are accompanied by the same kinds of altercations as gun killings; and (ii) that firearms and knives are used by whites and non-whites in about the same proportions. But the hypothesis states only that gun and knife attackers must differ "radically" in motivation, so neither (i) nor (ii) bear on the issue.

Zimring acknowledges, "it can be argued that because a knife is viewed as a less serious weapon than a gun, a lower proportion of knife attacks represent attacks in earnest" (1968a: 729). This, of course, is exactly Wolfgang's argument - that the truly earnest killers choose firearms. Zimring's overall argument would thus be more credible if it could be shown that knife attacks tend to be just as earnest as gun attacks, or, to restate the issue, if knife and gun attacks result from similar motivations.

To show that the rate of earnest attacks is the same for both knife and gun attacks, Zimring presents evidence on wound locations (1968a: Table 7). These data show that about 70% of all knife wounds (lethal or otherwise) are to the chest, abdomen, head, face, back, and neck -- "areas that are associated with serious attacks." In contrast, only 56% of the gunshot wounds were to these same areas. Zimring draws three inferences from this comparison:

(i) "Not all gun attacks can be per se considered attacks in earnest." As stated, this conclusion is self-evident. But Zimring wants to argue a stronger case, that the proportion of "in earnest" gun attacks is no higher than the equivalent proportion of knife attacks. And to sustain this argument, he cites the finding that only 56% of all gun attacks produce wounds in "serious" locations. Later he adds in attacks producing multiple wounds (which are "presumptively considered serious") and shotgun attacks not already included in his computations, and notes that these additions "still leave the total at roughly 60%. It is doubtful, therefore, that all gun attacks are accompanied by even ambiguous intentions to kill" (1968: 732).

This line of reasoning is very unpersuasive, since it amounts to an effort to assess intentions on the basis of marksmanship. (As he says, "we are using wound location as an index of the intended seriousness of an attack" [1968a: 731-2]). If one could assume that all murderers are perfect marksmen and all weapons used to commit firearms murders are perfectly accurate, then wounds would occur just where they were intended to occur, and in that case, there might be some possibility of inferring motivations from wound locations. The probability that either of these assumptions is true is virtually nil.

The different wound locations in knife and gun incidents may only result from differences in the physical circumstances surrounding the incident. Most knife wounds necessarily require that victim and assailant be in close physical proximity; indeed, at some point in the interaction, the distance between victim and assailant must reduce to zero, except in the (presumably rare) case of a knife thrown across some distance to create a wound. Firearms wounds, in contrast, obviously do not require this same close proximity; they can be inflicted at a distance. It is therefore possible that most knife wounds, at least, occur in the intended location, whereas the location of gunshot wounds will be a function of intent, marksmanship, and the accuracy of the weapon. These kinds of differences between the typical gun attack and the typical knife attack render problematic any effort to draw a substantive conclusion from the differences in wound location.

(ii) "A substantial proportion of the knife attacks reported to police appear to be attacks in earnest." Here, Zimring appears

to be on somewhat firmer ground. Between 70% and 80% of all knife wounds in his study were inflicted in "serious" locations (as defined above). Some fraction of these may have been accidentally serious, to be sure. In the heat of passion or duress, even a close range stab might miss the intended mark. Also, we can imagine that in the physical scuffling that must often accompany knife altercations, jabs intended for non-serious locations might be deflected and thus strike, unintentionally, a more serious part of the body (or, of course, the reverse). So even in the case of knife wounds, the relationship between intended and actual location must be less than perfect. Still, Zimring's 70% figure does at least suggest that a substantial portion of knife attacks are indeed "in earnest," and this constitutes the strongest evidence yet to be encountered that the motives of gun and knife attackers may be similar. (If this line of reasoning is valid, however, then the similarity between knife and gun attacks is that a high proportion of both are "in earnest." This would apparently bolster the "differential lethality" argument but would tend to undercut the "ambiguous motivations" argument.)

Even here, however, there is some need for caution. Consider, for example, the mechanics of a knife attack. With the knife held in hand, the kinds of thrusts that can be imagined are a straight forward jab, which would therefore strike at about arm height, a downward thrust from over the head, which would tend also to strike at or above arm height, a roundhouse swing, which would likewise tend to

strike at arm height, or an upward thrust from the waist, which would presumably strike in the abdomen or chest. While other kinds of thrusts and jabs can be imagined, and other physical arrangements between victim and assailant can be imagined, the expectation would nonetheless be that most jabs of a knife held in one's hand would be constrained by the mechanics of the situation to strike above the waist. (Zimring's data, incidentally, sustain this speculation; only 7% of the knife wounds in his sample occurred in the legs, as opposed to 24% of the gunshot wounds.) If the usual mechanics of the interaction between a knife assailant and his victim tend strongly to favor wounds above the waist, then we must ask what proportion of the above-the-waist body constitutes a "serious" location by Zimring's definition. This amounts to asking, What is the proportion of the surface area of a body above its waist that is not in the arms? The answer is about 75%. Phrased otherwise, if a body were stabbed at random above the waist, about 75% of all such stabs would land in "serious" locations. The wound location data reported by Zimring, in short, may not diverge significantly from what one would expect on the assumption that knife attackers stab randomly, and if this is all the data show, then it would be erroneous to infer any sort of intent from stab wound locations.

(These same considerations, of course, do not apply to gunshot wounds, since there is nothing in the physics or mechanics of shooting a gun that would cause wounds to occur preferentially above the waist.)

These differences suggest that it may be more informative to

compare above-the-waist wounds only between knife and gun attacks. Recalculations from Zimring's Table 7, with wounds to the legs (and for firearms, misses) omitted from the calculations, show that 25% of the above-the-waist knife wounds occur to the arms; the equivalent proportion of above-the-waist gun wounds is 14%. On the other hand, 27% of the above-the-waist gun wounds strike in the chest, vs. 16% of the wounds inflicted by knife. (Most of the remaining differences are modest, with the prominent exception that one is about twice as likely to be stabbed in the back as shot in the back [10% and 5%, respectively]). Owing to possibly errant marksmanship, it is not at all clear that anything should be concluded even from these comparisons, but these recalculations at least suggest that the proportion of "in earnest" gun attacks may be somewhat higher than the proportion of "in earnest" knife attacks, consistent with the initial Wolfgang hypothesis.

(iii) "There is no evidence that attacks in earnest are much more common with guns than with knives." This is one conclusion with which we can agree, so long as we also agree that there is no evidence that they are not. The point is simply that there is no compelling evidence to suggest any firm conclusion about the relative motivations of knife and gun attackers presented in Zimring's paper.

Following Zimring, Curtis (1974) has also considered the issue of homicidal motivations. The basic observation from which these considerations flow is that firearms are much more prevalent in homicides than in aggravated assaults, a zero-order result confirmed in all studies. There are, Curtis, notes, at least two possible explanations of this: (i) "The crimes can be viewed as very similar in circumstance,

with the differential in their seriousness largely explained by the fact that homicide offenders happen to have more deadly weapons at hand" (the Zimring argument), or (ii) "the homicide offender is more determined to kill and therefore chooses the weapon most capable of achieving this end" (the Wolfgang hypothesis) (1974: 108).

Curtis finds that he is more "persuaded" by the first, what he calls the "accessibility argument." His evidence, however, is very similar to Zimring's. One piece of this evidence has already been discussed, namely, "the consistent similarity between homicide and assault ...". This evidence, he says, "does not support differential intent." But it also "does not support" ambiguous intent. As we have already said, this evidence simply does not bear on the matter of intent.

"The low level of premeditation in homicide" is cited as a second piece of evidence. The data analyzed by Curtis in themselves do not bear on the premeditation issue: "We were unable to make an accurate count of premeditated homicides from the information available" (1974: 67). "But," Curtis continues, "legal and behavioral experts concur that careful planning over a considerable period of time have minimal import for the bulk of American homicides" (1974: 67). That the "experts concur," of course, does not necessarily mean that they concur for sound evidentiary reasons; the only evidence actually cited in connection with this putative "expert concurrence" is an estimate due to Wolfgang and Ferracuti (1967: 141) that less than 5% of all U.S. homicides are premeditated. When we turn to the Wolfgang and Ferracuti materials to find the empirical basis of this

estimate, however, we find that there is none, or at least none presented or referenced in the text itself. To be sure, the "expert testimony" is there: "Probably fewer than five percent of all known homicides are premeditated, planned, intentional killings, and the individuals who commit them are most likely to be episodic offenders who have never had prior contact with the criminal law" (1967: 141). But no reference for this estimate is cited, no tabulation of data is presented, no footnote directing the skeptical reader to the source of this information is given. It may very well be that fewer than 5% of all homicides fit this description, but there is no evidence, either in Curtis or in Wolfgang and Ferracuti, that shows or even implies this to be the case.

There is, in fact, some evidence suggesting that the proportion of premeditated homicides is several times higher than the Wolfgang-Ferracuti 5% estimate. One study traced a sample of homicides through the courts and found that about 16% of them were prosecuted as first-degree murder cases (i.e., murders with premeditation). Since the effect of plea-bargaining and related "extra-legal" pre-trial negotiations is always to reduce (and never to increase) the charge, it is clear that the proportion of actual premeditated homicides among this sample would be higher (by an unknown amount) than the 16% figure; even ignoring this potentially large downward bias, the empirically-generated estimate from this study is some three times the rate suggested in the Wolfgang-Ferracuti passage. The study showing the 16% figure is Wolfgang's own study of Philadelphia homicides (1958: 303).

A third source of evidence said by Curtis to favor the "accessibility" argument is another that we have already discussed, namely,

the high proportion of homicides that are accompanied by "altercations" (1974: 108), about which nothing more need be said.

Fourth, "Pittman and Handy's [1964] careful comparison of homicide and assault is consistent with" the accessibility argument (Curtis, 1974: 108). This source consists of an analysis of 241 aggravated assaults investigated by police in St. Louis for calendar year 1961. No criminal homicide cases are contained in the Pittman-Handy study; the "careful comparison" thus comes at the end of the article, where the St. Louis assault findings are compared briefly with Wolfgang's Philadelphia homicide findings (Pittman and Handy, 1964: 469-470). This comparison suggests that homicides and assaults are similar in the time and locations of occurrence, in "situational context" (that is, both crimes are typically accompanied by altercations), in victim-offender relationships prior to the incident, and in a few other ways; and that these crimes are different in type of weapon used, in alcohol involvement, and in a few other ways. As in the Zimring materials already discussed, there is nothing presented in the Pittman-Handy analysis that bears directly on similarities or differences in underlying motivations.

Fifth, there is a reference to "supportive clinical findings," first to the episodic evidence that "every psychiatrist has treated patients who were thankful that guns were not around at one time or another in their lives" (1974: 108), and secondly, to an experiment conducted by Berkowitz (1967) that suggests that "even the casual sight of a gun may catalyze violence" (1974: 108). Since the willful,

intentional murderer is not very likely to seek out psychiatric counseling for his or her aggressive acts, the "evidence" from "every psychiatrist" must be heavily discounted. Berkowitz' experimental evidence is rather more compelling at first blush, all the more so because the findings are very much along the lines implied in Curtis' characterization. But even here, at least two important caveats must be inserted:

(i) It is quite hazardous to assume that the behavior of undergraduate psychology students in a laboratory setting can be generalized to the behavior of criminals engaged in aggressive and violent acts bringing injury or death to the victim.

(ii) The initial experiment by Berkowitz and LePage (1967), and the follow-up work by Berkowitz (1968), have been replicated in some subsequent experiments (for example, Ford, 1973; Leynes and Parke, 1975; Page and O'Neal, 1977), but not in others. Fischer, Kelm, and Rose (1969), for example, using a knife as the stimulus, found the predicted enhanced aggression among male subjects but not female subjects; Turner and Simon (1974) found the predicted effects only in less apprehensive and less sophisticated subjects; and several studies, among them Page and Scheidt (1971), Buss, Booker, and Buss (1972), and Ellis, Weiner, and Miller (1971), found no "weapons effect" at all. The experimental literature thus contains at least three or four studies to suggest, as Curtis has it, that "even the casual sight of a gun may catalyze violence," but at least three more studies to suggest the opposite conclusion, and at least two additional studies to suggest that the nature of the effect varies according to

characteristics of the subjects. Since, as is well known, it is much easier to publish experimental results showing positive effects than to publish those showing no effects, it is quite probable that this compilation of published studies over-states the actual experimental evidence favoring the Berkowitz hypothesis. (A more thorough review of the experimental literature, reaching these same conclusions, is provided by Kleck, 1979b.)

Finally, "perhaps the most objective validation yet [of the accessibility argument] comes from Zimring's data on fatal vs. nonfatal assaults in Chicago" (Curtis, 1974: 108). The Zimring study in question is the 1968 study discussed in great detail above, which, to emphasize, neither supports nor rules out the hypothesis that most homicides result from ambiguous prior intentions to kill.

In later work, Zimring (1972) has also compared the relative lethality of attacks with handguns of various calibers, based on data on 156 handgun fatalities (from a total of more than 1100 total handgun attacks) in Chicago in a four-month period in 1970. The general pattern revealed by these data is straightforward: the lethality of the attack (that is, the proportion of attacks resulting in the death of the victim) regularly increased with the caliber of the weapon. Initially, this would suggest that the inherent lethality of a handgun increases with caliber, which tends to support the "technological efficiency" argument and thus, indirectly, tends to undercut the "differential motivations" argument.

Again, however, there are reasons for caution. It is certainly plausible, as Wolfgang argues, that the truly determined killers choose

guns, and it is a straightforward extension that the more determined they are, the larger the caliber chosen. A second, and perhaps more likely, possibility is that the truly determined killer prefers a firearm and attacks with whatever firearm is available. What varies over the caliber of the weapon is thus not the underlying intent but the success of the killer in realizing his intent. Still a third possibility is that the larger handguns are intrinsically more accurate weapons (vs. intrinsically more lethal), and thus that what varies by caliber is again not intent but the efficacy of the weapon in realizing one's intent. One apparently certain implication of Zimring's result is that the substitution of higher caliber for lower caliber handguns would almost certainly cause the rate of handgun deaths to increase -- as, for example, might occur in the face of a ban on small caliber handguns (the Saturday Nite Specials) that left all the heavier-duty equipment (the large caliber handguns) on the market.

There are, in addition to those of Zimring and Curtis, a relatively large number of other studies that report similar findings and that are therefore often cited as support for the hypothesis of ambiguous intentions. But the general form of the evidence is very similar to that already discussed; typically, they provide information on victim-offender relationships, on the presence of altercations as surface rationales for the homicides, on the preferential use of firearms, especially handguns, in homicides as compared to aggravated assaults, and so on. All such studies necessarily suffer the same general problem, namely, that in the absence of direct information on underlying motivations, these motivations have to be inferred from the objective circumstances

surrounding each case, an indirect and perilous inference.

Seitz (1972), however, has taken an entirely different approach to the issue, and as his study is among the more commonly cited in the literature, it bears examining in some detail.

As all other researchers in this area, Seitz also has no direct evidence on the motivations underlying homicidal attacks, and so his "refutation" of the Wolfgang argument in favor of Zimring's position is not based on the kind of direct comparison of motivations that one would very much like to see. The strategy, rather, is to draw out from Wolfgang's hypothesis an implication that can be directly tested, and to reach some conclusions about the hypothesis on the basis of that test.

According to Seitz, "basic to Wolfgang's 'murder by substitution' hypothesis are two questionable assumptions: all or most deadly attacks are motivated by a single-minded intention to kill and all or most weapons which might be substituted for a firearm are as lethal as firearms" (1972: 595-596). This formulation misrepresents Wolfgang's position in at least one important respect: Wolfgang does not argue that all substitute weapons are ipso facto as lethal as firearms, only that the substitute weapon would be just as lethal as a firearm if the assailant were motivated by an unambiguous and willful intention to kill. This assumption is substantially less "questionable" than Seitz' rendition of it. But questionable or not, neither of these assumptions is directly tested in Seitz' paper; indeed, the only direct evidence given on their "questionableness" is the obligatory citation to Zimring (1968).

The main finding reported by Seitz, and said to be inconsistent with Wolfgang's hypothesis, is that "there is an astonishing .98 correlation between the firearm homicide rate and the total homicide rate based on aggregate data for the fifty states" (1972: 596). Since it is not at all obvious that Wolfgang's hypothesis implies a contrary result, we need to ask about the line of reasoning that leads from what Wolfgang has actually proposed to an implication about this correlation. The relevant passage from Seitz, in full, is as follows:

Given the substitution hypothesis [that is, Wolfgang's hypothesis], we have little reason to expect any correlation between the firearm homicide rate and the total homicide rate. In fact, if such a correlation does exist, the substitution hypothesis is apparently inadequate to explain the observed systematic relation, since the availability of firearms does vary from area to area. On the other hand, the substitution hypothesis leads us to believe that such a correlation does not exist. For in areas where firearms access is relatively restricted, we should expect some proportional decrease in the firearm homicide rate but observe no change whatsoever in the total homicide rate. In aggregate comparison, therefore, there should be little or no correlation between firearms homicide rates and total homicide rates (Seitz, 1972: 596).

We quote this passage in full mainly because of a strong suspicion that it is a non sequitur. That is, we find nothing here to show that a low correlation between the firearm and total homicide rates is implied, even indirectly, in the Wolfgang hypothesis. Wolfgang's hypothesis does imply that in areas where there are no guns, people would murder with other weapons, more or less at the same rate. This might in turn imply that in areas with relatively fewer guns, there would be relatively fewer gun murders and relatively more murders by other means. A test of this implication on state-level aggregate data would therefore require that the availability of

firearms for illicit or criminal or homicidal purposes itself vary substantially across states, and while it is clear that the density of private gun ownership does vary in this manner (see Chapter 6, above), this does not necessarily mean that the availability of firearms for use in willful homicide varies likewise (despite Seitz' assertion to the contrary). In fact, Seitz' position would seem to imply that there are at least some states where a truly determined and willful killer would find it relatively difficult to lay hands on the appropriate firearm, and this is a dubious proposition at best.<sup>10</sup> In short, it is not at all clear that the availability of firearms for criminal purposes varies enough across states to make state-level aggregate data useful for examining these issues.

In any case, it is clear that Wolfgang's hypothesis cannot be made to stand or fall on the basis of a methodological artifact, which Seitz' "astonishing" .98 correlation is, at least in substantial part. The artifice is simply that in every state, homicides with firearms constitute a large portion of the total homicides; in fact, as is well known, approximately half or more of all homicides are committed with firearms. Since firearms homicides represent a large fraction of all homicides, then, by construction, the rate of firearms homicide must be strongly correlated with the total homicide rate, with the magnitude of the necessary correlation determined strictly by the proportional contribution of firearms homicides to the total. What the .98 correlation implies, in short, is only that Seitz has the same variable (or nearly the same variable) on both sides of the equation.

If one were to subtract from the .98 correlation that portion due only to the fact that many homicides are firearms homicides, one

would still presumably be left with some positive correlation. One approach would be to correlate the firearms rate with the non-firearms rate (rather than to the total rate), and this correlation would show whether there is any tendency for states high in one rate also to be high on the other. That would be interesting information in a way that the reported .98 correlation is not, although it is still not clear what implication it would have for Wolfgang's initial hypothesis. However, Seitz does not report such a correlation, and so we are not in a position to speculate about its possible implications.

In sum, none of the studies of homicide considered here confirms or rules out the hypothesis that most homicides result from willful and unambiguous intentions to kill. This, to emphasize a recurring but important theme, is not an argument that Wolfgang's hypothesis is true, only an argument that the studies most often cited as showing it to be false do not show this at all. The essential point here is not that one hypothesis is consistent with the available evidence and the other not, but rather that most of the "evidence" assembled on either side of the issue has little or no relevance to it.

Ironically, some of the strongest evidence favoring Zimring's "ambiguous intentions" hypothesis about homicides comes not from studies of homicides, but from studies of robbery, particularly armed robbery. Armed robbery is an especially interesting crime in present context because there is usually no uncertainty about the underlying motives. In most cases, the motive of robbery is economic gain to the offender.<sup>11</sup> And since the motive underlying most robbery tends to be the same, then the differences in outcomes of robberies presumably do

not reflect differences in underlying motivations, and would therefore reflect "something else." And one of the possible "something elses" that it might reflect would, for example, be differences in the intrinsic lethality of weapons used to commit robberies, independent of the underlying motives of offenders. What, then, do the data on robberies show?

Cook (1976, 1978, 1980) has proposed what he calls a "strategic choice" analysis of robbery. The essence of this analysis is "that observed robbery patterns are the aggregative result of choices made by individual robbers, and that these choices can be understood in terms of the robber's need to intimidate his victim and his desire to acquire as much money as possible with a minimum of effort" (1976: 173).<sup>12</sup> The two key choices that robbers must make are, first, who to rob, and secondly, what weapon to rob with.

For a variety of subtle reasons, these two choices are intimately connected to each other. All else equal, for example, the first choice is an easy one: rob the most lucrative targets. But, as Cook points out, the most lucrative targets tend not to be the easiest targets, and vice versa: the very young and the very old, for example, are "easy" robbery targets, but not very lucrative; banks are very lucrative but not very easy to rob. Even restricting attention to non-commercial robberies, it is not hard to imagine that "ease" and "profitability" are negatively related; for example, the probability that potential victims are themselves armed and in a position to deter a robbery would certainly be expected to increase with the amount of cash or other valuables being carried. Thus, any choice to

rob only the most lucrative targets would tend to be accompanied by a parallel choice to employ the most intimidating possible means of robbery, namely, a firearm; and alternatively, if a robber were content to rob only easy (and relatively unprofitable) targets, then a less intimidating weapon would suffice.

The essential point that flows from Cook's analysis, at least for our purposes, is that robbers arm themselves with firearms not because they have relatively more lethal intentions in respect to their eventual victims, but because they expect to be robbing relatively more lucrative targets and "need" (in this sense) a high level of intimidation in order to be successful. The death of the victim, when it occurs, is not, in other words, the intention of the robber in most cases.

Death or injury to the victim is not an uncommon accoutrement to robbery. In 1974, for example, some 17% of all murders that occurred in the United States occurred during the course of a robbery (Cook, 1976: 181). Or, percentaging in the other direction, roughly five of every thousand robberies result in the murder of the victim, and roughly six in every hundred result in personal injury (Cook, 1978: Tables 1 and 2). (Here, "personal injury" means injuries sufficiently serious that a medical care expense is incurred by the victim as a result.) Thus, a very large majority of all robberies apparently involve "successful" threats by the perpetrator, capitulation by the victims, and no direct physical harm; in some 90-95% of the cases, that is, the threat of harm is apparently adequate. But in a non-trivial fraction of the cases (the remaining 5-10%), threat

alone is not enough and some physical harm actually comes to the victim, and it is the outcomes of these cases that bear on the themes of the present chapter.

Data presented by Cook (1976: Table 10-4) suggest that some 38% of all robberies are unarmed robberies; in 41% of the cases, robbers are armed with some weapon other than a firearm, and in the remaining 21% of the cases, the robber is armed with a gun - almost invariably a handgun. These data thus suggest that about a third of all armed robberies are committed with guns. A later estimate by the same author is rather higher, at 45% (Cook, 1978: 282), and 1974 data for Detroit reported by Zimring (1977: Table 1) show a figure as high as 70%. (Zimring's data also show a very evident long-term trend, or actually, several long-term trends. First, the percentage of all robbery that is armed robbery increases quite substantially in his data, from 49% in 1962 to 61% in 1974. And secondly, the fraction of armed robberies committed with a firearm also increases, from 41% in 1962 up to the 70% figure registered in the 1974 data.) Depending on year, city, and other intangibles, then, we may conclude that firearms are involved in somewhere between one-third and two-thirds of all the armed robberies that get committed.

How do death and injury rates in robbery vary as a function of weapon? On the grounds that guns are more effective intimidators than any other form of weapon, it is sometimes argued that gun robberies should be less likely than other forms of robbery to result in harm to the victim. This argument asserts, in essence, that victims are less likely to resist, and thus less likely to be harmed, if the

robber is armed with a gun than if armed with some other, less intimidating weapon. Interestingly, most available studies of personal injuries in robbery tend to sustain this speculation. In Cook's (1976) data, for example, 6.2% of all robbery victims, irrespective of weapon, were injured to the extent that they incurred some medical expenses as a result. Among victims robbed with a gun, however, the proportion was only 2.8%; among those robbed with a knife, 6.6%, and among those robbed with any other weapon, 12.0%. Interestingly, some 5.2% of the victims of unarmed robberies incurred some medical expense, approximately double the percentage of injured victims among those robbed with a gun. Similar results have also been reported in Cook and Nagin (1979), Conklin (1972), Block (1977), and indeed, in most other studies that have examined robbery injuries as a function of weapon type. In the Boston data reported by Conklin (1972), for example, some 42% of the victims in unarmed robberies were personally injured, vs. 25% of the victims in knife robberies, and only 9% of the victims in firearms robberies. (Conklin's figures are all much higher than Cook's because Conklin's data are based on a sample of robberies reported to the Boston police, whereas Cook's data are taken from criminal victimization surveys. That robberies involving personal injury are much more likely to get reported to the police, plus differences in the operational definition of "personal injury," thus account for the differences in the absolute values of the injury proportions reported in the two studies.) Cook's conclusions from these and similar data bear quoting. "Gun robberies," he writes, "are least likely to result in an injury requiring medical care, and a relatively low percentage (0.3 percent) result in serious

injuries (\$1,000 or more in medical expenses). A gun ordinarily eliminates the need for a robber to physically attack the victim in order to gain his compliance" (1976: 185).

All this, of course, speaks only to the issue of personal injuries and says nothing about deaths. No homicide victims ever appear in criminal victimization surveys, so Cook's 1976 data are not adequate to address this issue. Other data, however, show quite unmistakably that the death patterns are just the opposite of the injury patterns; in particular, whereas firearms robberies are substantially less likely than other forms of robbery to result in the injury of the victim, they are substantially more likely to result in the victim's death. Unpublished UCR data reported by Cook (1978), for example, show 7.66 robbery-connected murders per 1,000 gun robberies, compared to 2.71 robbery-connected murders per 1,000 non-gun robberies, for a lethality differential of about 3 to 1 (Cook, 1978: Table 2). Zimring's (1977) Detroit data show the same pattern: "Death rates from gun robbery are consistently higher than those reported for other methods of attack" in all years where data are available (1977: 321). So far as we can determine, there is no study in the published literature to contradict this conclusion. Robbery by gun is thus less likely to lead to injury, but more likely to lead to death, than robbery by any other means.

Why, then, are robbery-connected gun assaults substantially more lethal than robbery-connected assaults with other weaponry? If, as we have assumed, the underlying motive in all robberies is about the same, then this difference cannot reflect differences in underlying motives. We tentatively suggest that the difference results mainly from the dif-

ferential inherent lethality of guns relative to other weapons. Thus, the differential death rates in robberies committed with guns vs. other weapons appear to be the only strong evidence available to clearly suggest that gun assaults are more likely to lead to death than are assaults with other weapons, independently of any possible confounding correlation with differences in underlying motivations. If we further assume that the lethality in question is a property of the weapon, and not a property of the crime, then the enhanced lethality of guns would generalize across crimes, which in turn lends credence to the "differential lethality" interpretation of the homicide and aggravated assault data considered in great detail earlier in this chapter.

But even here, there is again reason for caution. Throughout this discussion, we have assumed that the underlying motive in all robbery is similar, namely, economic gain to the robber, and thus, that differences in outcomes do not reflect differences in underlying motive. More recent research by Cook (1979, 1980), however, has questioned whether economic gain is in fact the underlying motive in at least one important class of armed robberies, namely, those robberies that are accompanied by the slaying of the victim (the critical type of robbery in this discussion). According to Cook's recent evidence, examples, and analysis, many robbery murders do not arise "accidentally" or "unintentionally," as the result of unforeseen circumstances (e.g., victim resistance), but result from what is most appropriately described as the innate brutality (or violence proneness) of those doing the robbery. This seems especially to be the case in robberies committed by more than one offender (e.g., gang robberies). If, as seems reasonable, the in-

nately brutal preferentially arm themselves with firearms, then it is again possible that the lethality differential in the robbery case also reflects differences in a priori motive or intent, rather than inherent differences in the lethality of the weapon chosen, in which case it must be concluded that even the robbery data analyzed here are at least somewhat ambiguous with respect to their implications for the "ambiguous intentions" or "differential intentions" arguments.

The above point notwithstanding, the robbery data provide at least some reason to believe, along with Zimring, Curtis, and many others, that reductions in the availability of guns would lead to reductions in death from violent crime. But the robbery data reported by Cook also suggest that this would not be a pure and unalloyed "plus" all across the board; the decrease in violent death, it appears, might be balanced off against some very undesirable increases, along the following lines:

(i) If there were no guns with which to commit robberies, it is at least possible that the overall robbery rate would sharply increase. Presumably owing to the level of intimidation and the lucrativeness of targets chosen, gun robberies are sharply more profitable than robberies committed by other means. In Cook's victimization data, for example, the average "take" in robberies committed with guns was \$164, and only 22% of these robberies resulted in a zero "take." In contrast, the average "take" in knife robberies was only \$60, and 34% of them resulted in zero "take." These figures suggest that a robber would have to substitute approximately three knife robberies to generate the same average "profit" now generated in one gun robbery. The possible implications of this for the overall robbery rate are distressingly obvious.

(ii) The reduction in deaths that might accompany the "no guns" condition would probably be accompanied by an increase in personal injuries. Knife robberies are at least twice as likely to lead to an assault of the victim as are gun robberies, and robberies with other forms of weaponry, more likely still. Any wholesale replacement of gun robberies with other armed (but non-gun) robberies would therefore presumably cause the overall rates of personal injury in robbery to increase, simply because fewer victims would be readily intimidated, and there would be fewer cases where the mere threat of violence was ample.

(iii) Since, in light of Cook's strategic choice analysis, guns permit access to more lucrative targets, the absence of guns would presumably cause robbers to focus on less lucrative and less "resistant" targets. Thus, a no-guns condition might lead to fewer robberies committed against healthy middle aged males, but proportionally (or even absolutely) more robberies committed against women, the very young, and the elderly.

These potential "negative feedback loops" in the guns and robbery equation at least suggest the possibility that society would be not much better off under the no-guns conditions than it is under present conditions, at least insofar as death and injury resulting from robbery are concerned. Suppose, for example, that it were somehow possible to reduce the number of guns available for robbery to zero. Suppose, further, that in this condition, all the robberies now committed with guns would be committed with some other armament, presumably knives. Also suppose that each present gun robbery would

be replaced by three non-gun armed robberies, in order to equalize the total "profits" under both arrangements. And suppose finally that the weapons-specific death and injury rates reported by Cook (1976, 1978) continued to hold. With these assumptions in hand, it is possible to construct Table 11-2, which projects total deaths and injuries resulting from robberies under present and hypothetical "no guns" conditions.

The projections for the "present" condition are based on a hypothetical 1,000 robberies; Cook's death and injury rates suggest that under present conditions, these 1,000 robberies would lead to roughly 3.75 victim deaths and some 58 victim injuries. These figures, of course, are approximately equivalent to the present death and injury rates from robberies of all sorts.

Projections to the "no guns" condition are positively dreary. Note first that the "substitution" of three armed non-gun robberies for each present gun robbery raises the total number of robberies from 1,000 to 1,420, a 42% increase. Note further that in light of this increase, the total projected victim death does not decline; it is, rather, approximately the same as the number projected for the present condition (3.85 deaths here, vs. 3.75 under present conditions). Total victim injuries, however, approximately double, from 58 to 102. Considering only the death and injury that result from robbery, in short, these figures intimate that a no-gun condition might effectively double the number of injuries incurred and leave the total number of deaths more or less unaffected.<sup>13</sup>

These projections, of course, are extremely "iffy" and cannot under any circumstance be taken as "most probable case" scenarios;

TABLE 11-2

PROJECTED DEATHS AND INJURIES RESULTING FROM ROBBERIES  
UNDER PRESENT AND HYPOTHETICAL "NO GUNS" CONDITIONS

Present (N = 1,000 Robberies)

Type	N	Death Rate	Deaths	Injury Rate	Injuries
Gun	210	7.66/1,000	1.61	3/100	6
Other Weapon	410			8/100	33
Unarmed	380	2.71/1,000	2.14	5/100	19
Totals	1,000		3.75		58

"No Guns" Condition (N = 1,420 Robberies)

Type	N	Death Rate	Deaths	Injury Rate	Injuries
Gun	--	--	--	--	--
Other Weapon	1,040	2.71/1,000	3.85	8/100	83
Unarmed	380			5/100	19
Totals	1,420		3.85		102

Source: See text.

the point of Table 11-2 is only to illustrate some of the possible implications of Cook's and others' robbery analyses. Additional complexities that are not reflected in the table would have to be taken into account in order to take these projections seriously. For example, as Cook (1976) argues, the reduced "profitability" of robbery in the no-guns condition might cause many potential robbers to forego robbery in favor of some more conventional business, and this "deterrent" might well offset the anticipated robbery increases on which Table 11-2 is based. Also, if the differential lethality of guns relative to other weaponry held up across crime types, then there would also be some drop in homicidal deaths (if not in robbery deaths), and these effects would also have to be taken into account in any persuasive "probable case" scenario. Table 11-2 therefore does not amount to a "best guess" about what society might be like in the no-guns condition; rather, it serves the much more modest, but nonetheless very useful, function of demonstrating just how complex this whole matter of guns, crime, and violence is.

FOOTNOTES

1. It should be emphasized at the outset that the bulk of this chapter, and of the literature it reviews, is hypothetical in the sense that it speculates on what might happen were society somehow able to attain a "no guns" (or, in some cases, a "no handguns") condition. Given the numbers of guns already present on the scene, it is transparently obvious that such conditions would be exceedingly difficult, or impossible, to attain.

This point is sometimes granted, but with an important caveat. We know from contemporary existence the circumstances that obtain in a "many guns" condition. We can theorize on the circumstances that might obtain in a hypothetical and admittedly unrealizable "no guns" condition. Still, if we cannot achieve a "no guns" condition, we can presumably at least reduce the total number. The inference is that the "fewer guns" condition would produce a state of affairs somewhere between the "many guns" and "no guns" condition.

The critical inference, however, would only follow if the general reduction in firearms availability were accompanied by a proportional reduction in the availability of firearms to criminals for criminal use. It may be taken as self-evident that something in excess of 99% of all privately owned firearms are never involved in any sort of criminal act, and it is certainly possible (some would say extremely likely) that the criminally abused 1% would be the last guns touched by any sort of restrictive weapons policy. The implication is that society might have to come asymptotically close to

- the "no guns" condition before any improvement over the "many guns" condition is realized. There is, in short, no necessary linear proportionality between reductions in the general availability of firearms to the private market and reductions in the specific availability of firearms to persons wishing to arm themselves for criminal or illicit purposes.
2. As Wolfgang himself says, "More than the availability of a shooting weapon is involved in homicide. (...) The type of weapon used appears to be, in part, the culmination of assault intentions or events and is only superficially related to causality" (1958: 82-83).
  3. The difficulties of inferring homicidal motives from victim-offender relationship data are well-documented in a finding reported by Block (1977), that between 1965 and 1974, the proportion of Chicago homicides involving persons known to each other before the incident dropped from 76% to 57%. "While it is still true," Block concludes, "that most victims and offenders know each other before a killing, it is not nearly so true as in the past." Zimring himself has noted a similar pattern for the nation at large: "National data and studies of individual cities show that while the majority of all killings are still committed by friends or acquaintances of the victim, a substantial and increasing proportion of the 'new American homicide' is the outcome of robbery - an event where victim and offender are usually strangers" (1977: 317; see also Curtis, 1974: Table 3-2). Yet, neither Block nor Zimring advances the obvious conclusion from this that Zimring's (1968) treatment of the relationship data would

suggest, namely, that the number of homicides involving "ambiguous intentions" has likewise sharply decreased.

The idea that domestic shootings involving family members are spontaneous "crimes of passion" -- isolated outbursts occurring in the heat of circumstances and involving normally placid, nonviolent people -- is a recurring image in the literature. It is, however, very difficult to square with a study of domestic killings in Kansas City, conducted by the Police Foundation (1977). That study showed that no fewer than 85% of all homicides involving family members had been preceded at some point in the past by some other violent incident sufficiently serious that the police were called in. Kleck has concluded from this finding, "Domestic killings are rarely isolated outbursts of previously nonviolent people, but rather are usually part of a pattern of [domestic] violence engaged in by people who are known to the police and to others as violence prone" (1979b: 18).

The lesson to be learned from the Kansas City study is a very important one that deserves some emphasis. Reference to domestic homicides as a reason to reduce the private ownership of weapons has become commonplace in the pro-control literature, as it is the most obvious case of the "heat of the moment" dispute that turns lethal just because there is a firearm in the home. The imagery is, not infrequently, that of a bereaved spouse, head in hand, weeping uncontrollably over lethal behaviors committed in a fleeting and now much regretted moment of rage -- the classic case of "ambiguous intention".

The Kansas City study makes it plain, in contrast to this imagery, that much domestic homicide is not an isolated occurrence or outbreak but rather is the culminating event in a pattern of interpersonal abuse, hatred, and violence that stretches back well into the prior history of the parties involved. It is not hard to imagine that many of these homicides are preceded at some point by some comment to the effect, "If you do that to me again, I am going to shoot you." He does, and she does. The point, of course, is that the a priori intentionality in many cases of domestic homicide is not going to be nearly as "ambiguous" as it is depicted in the typical account.

4. Virtually all available studies report very similar findings; "altercations" of the sort shown in Table 9-1 are routinely found to accompany somewhere between 70% and 90% of all homicides (and aggravated assaults). (See Curtis, 1974; Table 3-1, for the most extensive available compilation of national data on this topic.) The empirical finding being reported by Zimring is therefore not in serious doubt; our question concerns only the interpretation of it.
5. Perhaps there is a parallel that can be drawn here to the case of hunting and shooting deer. One of us (Wright) is a butcher by avocation and thus occasionally prepares deer carcasses for home freezers. Over the years in which he has pursued this hobby, his total sample size for deer carcasses is in the range of 15 to 20. The analogy between shooting deer and shooting people in a homicidal situation is obviously not very tight. On average, deer present a somewhat smaller target (the average deer might run in the range

between 90 and 120 pounds); also, they tend to be on the move when shot at, and the conditions for shooting are usually not ideal, as there are brush, trees, and other obstacles in the way. On the other hand, the weaponry used to hunt deer is, one may assume, an order of magnitude better suited to the task than the weaponry used in the typical firearm homicide; the standard Saturday Nite Special has an effective accurate range of tens of yards at most, whereas the typical deer rifle, outfitted with proper scope and sights, is accurate over several hundreds or even thousands of yards. We may also take it as self-evident that the average deer hunter is a better marksman than the average murderer, and also that the "underlying motivations" of the deer hunter when he pulls the trigger are utterly unambiguous: the intention is to kill the deer. The significance of Wright's experience in present context is that he is yet to encounter, over a sample of some 15-20 taken deer, even a single deer that was taken with one and only one shot. Indeed, the aura that surrounds the rare hunter who is capable of such a feat borders, in hunting circles, on the religious (as was intimated, for example, in The Deer Hunter, an Academy Award movie).

All this, of course, is nothing but a personal reminiscence. But it does suggest that capable marksmen, armed with highly accurate and efficient weaponry, aiming unambiguously to kill roughly man-sized targets, are seldom able to kill their prey with a single shot. That a much higher proportion of murderers, armed with much less impressive weaponry, kill with a single shot might therefore cause us to wonder just how ambiguous the underlying motives are.

6. We say, "second explicit premise," because there is a third premise in Zimring's argument - namely, that some sort of policy could be devised and implemented whose effect would be actually to reduce the availability of firearms for illicit criminal purposes. Even if all the rest of Zimring's argument could be confirmed, the "less death" conclusion would only follow if this third premise were true, and while the probity of this premise is very much a complex and open question, the sheer numbers of weapons already in private hands in the United States (see Chapter Two) give one at least some reason to be skeptical. (see also footnote 1, above).
7. To be sure, others have quarrelled with this assumption. Kates (1978: 17ff), for example, considers that in the face of a ban on handguns, killers and assaulters might opt for long guns as the substitute weapon. That shoulder weapons are already some two or three times more prevalent than handguns lends more than a little credence to this assumption. (Kates' argument does not directly address Zimring's analysis, since the comparisons drawn by Zimring are between all gun attacks, both handgun and long gun attacks, and all knife attacks. Zimring's speculations therefore relate to a hypothetical "no guns at all" situation, rather than the more limited "no handguns" situation. Kates' argument, however, is valid to the extent that a ban on handguns is a more probable "gun control" measure than a ban on all private weapons.)

Kates further argues that long guns are substantially more lethal than handguns - some four times more lethal, according to his sources, mainly because of the higher muzzle velocities attained by long guns

and the more massive bullets that they fire. (Close-range attacks with shotguns, it appears, are even more lethal than short-range rifle attacks. One medical study, entitled, "Gunshot Wounds of the Abdomen" (Taylor, 1973) remarks, "Shotgun injuries have not been compared with other bullet wounds of the abdomen as they are a thing apart ... [A]t close range, they are as deadly as a cannon" [quoted in Kates, 1978: 33].) What, then, would be the effect on homicide rates if, in a no-handguns condition, long guns were chosen as the substitute weapon? Kates calculates that the homicide rate would double if "half of the prospective killers substituted long guns while the other half went to knives," "even if," he adds, "we assume that none of those using knives succeeded in killing their victims" (1979:20).

8. Vinson's (1974) paper is virtually a point-by-point paraphrase of Zimring (1968), based on data for Australia. With a few exceptions noted in the text, the Australian findings are identical on all points to Zimring's findings for Chicago.

Kleck (1979b) has pointed out that Zimring's initial (1968) estimates of the comparative lethality of gun vs. knife attacks are confounded seriously by sex differences in choice of weapon. Kleck recomputes Zimring's Table 5 to show that 87% of the gun assaulters were male, vs. only 65% of the knife assaulters; thus, women are disproportionate among the category of knife assaulters. Part of the lesser lethality of knife attacks may therefore stem only from the fact that women are less likely to command the physical strength necessary to kill with a knife. "These data," Kleck concludes, "serve

to caution us that it is by no means obvious to just what degree guns are technologically deadlier than knives."

Kleck's conclusion in this regard is routinely contradicted in the literature, usually by assertion and a following reference to Zimring's research. One typical example is as follows: "First, firearms are technologically more effective tools for inflicting serious harm (Zimring, 1972; Newton and Zimring, 1969), and therefore an assault involving a firearm is likelier to result in a fatality than an assault with a less effective weapon like a knife or fists." The interesting aspect of this passage is not that it contradicts the conclusion advanced in the passage from Kleck quoted above, but rather that Kleck is the author of both passages. (The passage quoted in this paragraph is from Kleck, 1979a: 893).

9. There is, to be sure, a very serious "apples and oranges" problem with comparisons of this sort. Zimring's comparison, for example, is between the relative lethality of all gun attacks vs. that of all "knife" attacks - "knife" here referring to any sharp-bladed or sharp-pointed instrument. The "gun attack" data therefore combine both handgun attacks and attacks with long guns; the inclusion of long gun attacks, especially shotgun attacks, tends, for obvious reasons, to raise the average lethality of "gun attacks." Likewise, the "knife attacks" in the data include not only attacks with butcher knives, hunting knives, and other relatively heavy long-bladed weapons, but also attacks with pocket knives, pen knives, ice picks, possibly even forks and beer can openers (anything, in sort, that the police classify as a "sharp instrument"). And these inclusions, also for

obvious reasons, tend to lower the average lethality of "knife" attacks.

A more informative comparison might therefore involve handgun attacks vs. attacks with heavy, long-bladed knives. The available data do not suggest that the former are distinctively more lethal than the latter. One study of persons hospitalized with penetrating abdominal wounds found that some 83% of those shot with handguns survived the attack; for those stabbed with butcher knives, the survival rate was 87%, a trivially small differential. (These findings are reported in Kates, 1978: 18). Another medical study of abdominal trauma (Kyzoff, Shaftan, and Herbsman, 1966) concludes, "there is no reason to expect that a sharp knife inflicts less damage than a dull, low velocity bullet."

10. Consider, for example, the case of New York City. In general, there are fewer private weapons in the Northeast than in other sections of the country; moreover, there are fewer in urban locations than in rural locations (see Chapter Six for evidence on both points). Also, New York has a relatively restrictive set of firearms laws. But would we want to argue from these facts that the "availability" of firearms for criminal purposes is somehow less in New York City than in, say, Boise, Idaho, where the rates of private gun ownership are very much higher? Hardly. A recent guess, published in the New York Times for 2 March 1975, is that there are some 2,000,000 illegal pistols within the city limits; and according to Cook (1978: 283), "18 percent of all U.S. robberies are committed in New York City alone."

11. The exception would be an intentional homicide where the victim was robbed as an afterthought, which would be more murder than robbery, but which would probably be treated by the police as a "robbery homicide" (see Cook, 1978: 304). Cook's (1978) article presents some evidence that this exception is not typical of robbery homicides; in most such cases, the motive is robbery and the homicide is an "afterthought" not the reverse. Later work (Cook, 1979, 1980), however, suggests that slaying the victim may be the primary motive more frequently than initially assumed. The implication of this is discussed later in the text.
12. The phraseology Cook uses here is not sexist so much as descriptive; according to his (1976: 175) data, "robbery is a male occupation, 96 percent of incidents involved male offenders (including 3 percent in which males and females worked together)."
13. Indeed, the "no-guns" situation might even be worse than this depiction. The projections of Table 11-2 do not take into account any possible "substitution" of less resistant for more resistant targets of robbery, and yet Cook's strategic choice analysis implies that this would follow in a no-guns condition. In turn, injuries that were "serious" to an able-bodied healthy male might well prove fatal to an 80-year-old woman. If the no-guns condition caused substantially more robberies to be committed, say, against the very old, then some fraction of the projected injuries might, in fact, turn out to be projected deaths, in which case the advantages of the no-gun condition would be even dimmer.

CHAPTER TWELVE

TREATMENT OF WEAPONS OFFENDERS IN THE CRIMINAL JUSTICE SYSTEM

The opponents of more restrictive weapons ownership and use policies have frequently argued that trying to solve the problem of violent crime through such measures is to put the cart before the horse. Gun ownership among the population at large, they point out, is a right, not a crime, and they argue, the proper strategy is therefore not to restrict that right but to punish those who abuse it. One solves the problem of violent crimes committed with firearms not by further restrictions on the legitimate ownership and use of firearms among the general population, but by quick and severe punishments of those who employ guns for illicit or criminal purposes. This argument thus directs attention to the criminal justice system, and the treatment of weapons offenders within it, as the nexus where the problem of criminal violence due to weapons may be most sensibly addressed.

Public opinion data reviewed in Chapter Thirteen, following, shows substantial (indeed, overwhelming) popular support for the concept of severe and mandatory prison sentences for those convicted of a violent crime involving the use of a weapon. Consonant with public thinking, several jurisdictions now have mandatory sentencing provisions for some firearms crimes and sentencing enhancements for crimes committed with weapons, among them Massachusetts, Detroit and California (see Chapter Fourteen for an exhaustive compilation of state weapons regulations and laws). The effect of such provisions in the legal code on criminal violence committed with weapons and the actual implementation of these laws in the criminal justice system remain largely open questions (see

Chapter Fifteen for a more detailed discussion of these issues).

The purposes of the present chapter is not to evaluate the effects of mandatory gun crime sentences nor to assess the merits of the argument that sentencing and other criminal justice procedures are the proper place at which to intervene in the problem of criminal violence committed with weapons. The purpose, rather is more modest, namely to review the existing research which has focused on those who have committed crimes with weapons once they are apprehended, charged with a weapons crime or a felony and are processed through the local court systems.

It is somewhat surprising how little research has been done on the effects of weapons on court disposition. There is a substantial literature on the determinants of sentencing (see the bibliography compiled by Ferry and Kravitz, 1978), but the largest share of it has been concerned with what is called "sentencing disparity" -- that is, whether certain classes of criminals, such as blacks, Hispanics, the lower classes, women, and so on, are sentenced differently than other classes. In addition, the growing body of empirical work on the issues of prosecution and disposition of cases in the criminal justice system has also focused mainly on the questions of discrimination based on "extra-legal" factors. When there is any data available on weapons, most court studies include this factor simply as an additional control measure of the seriousness of the case or as an indication of the quality of evidence (e.g., whether the weapon involved was recovered as evidence) and little attention is devoted to any weapons effect found (Bernstein *et al.*, 1977; Lizotte, 1978; LaFree, 1980; Nagel *et al.*, 1980). Since most court studies have directed attention to other questions, the effects of weapons use on case disposition has been

largely unstudied (the exception is a study by Cook and Nagin (1979) which is discussed more fully below).

It has been well recognized, at least since the Wickersham Commission of 1931, that the popular image of the criminals courts -- in which a defendant is initially charged, formally arraigned and goes to trial thereupon to be found innocent or guilty by a jury of peers, and if guilty, punished in some commensurate manner by the judge -- is appropriate only to a very small percentage of all criminal cases that appear before the courts (see Blumberg, 1979; Brosi, 1979). Nearly all court cases (both misdemeanor and felony) are disposed of at some point in the criminal justice system before they reach the formal trial stage, either by outright dismissal or guilty pleas. The proportion of arrests initially charged as felonies that go to trial is on the order of ten percent or less of all cases in many jurisdictions (Brosi, 1979: 4).

For this reason, the study of felony case disposition in the court system should conceptualize the court as a "case filtering" system, consisting of a series of successively finer screens, with some proportion of the initial cases flowing out of the system at each stage. The importance of this view for the present discussion is simply that the factors influencing the case outcome at each stage may well vary stage-by-stage, and more importantly, the effects of weapons use on felony case dispositions may well be different at each point.

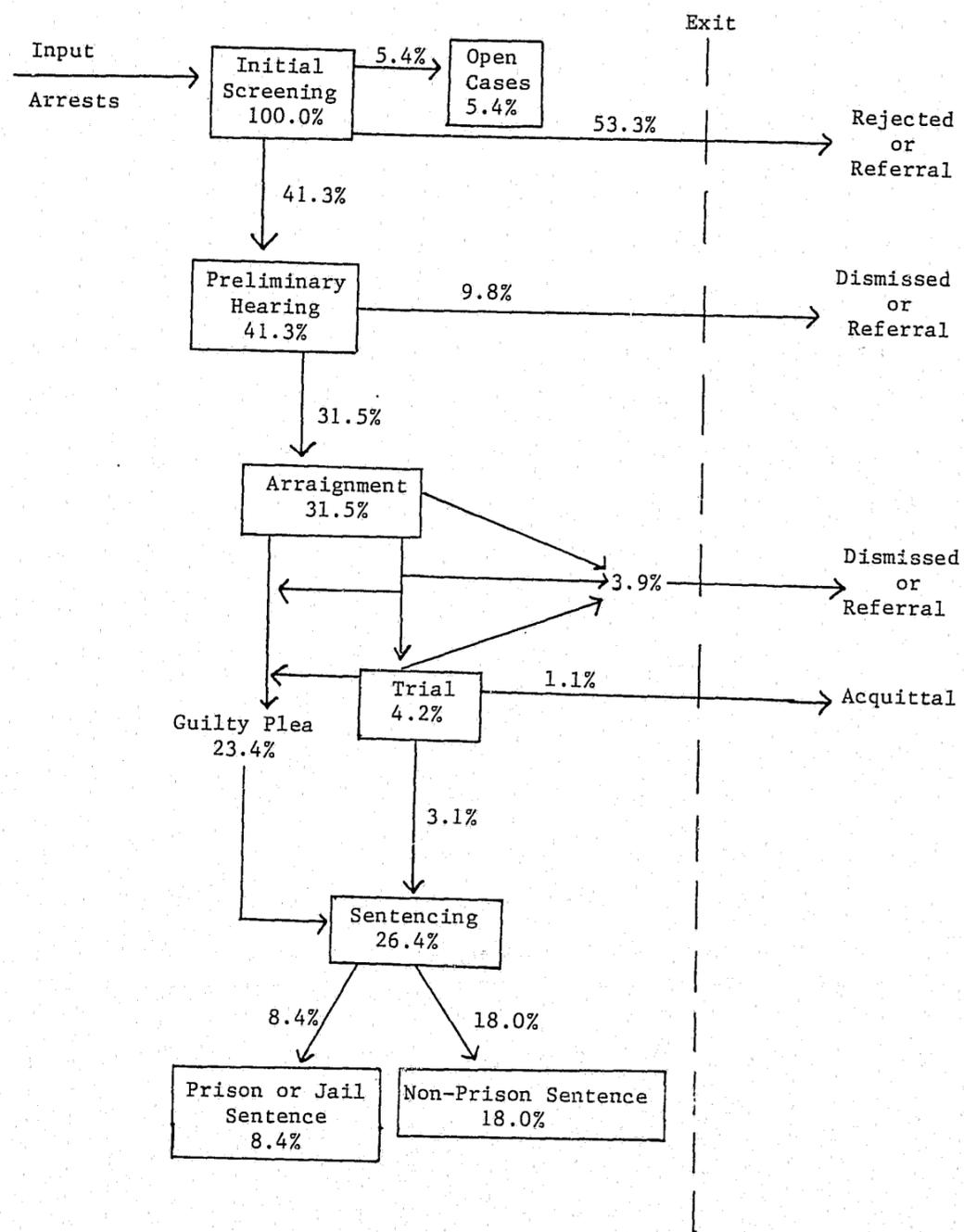
In a separate study in this project, we have analyzed the effects of weapons use on felony case dispositions in detail. Specifically, we focused on the ways in which felonies committed with a weapon were treated differently at all stages of the criminal court system. The project

analyzed felony case dispositions made in the Los Angeles County Superior Court during 1977 and 1978. A more complete description of all of the findings of this study are presented in a separate report (Rossi *et al.*, 1981), only a brief summary highlighting the key findings is given here.

To get some sense of the full criminal court system, Figure 12-1 shows the ultimate fate of a sample of 5000 felony arrests<sup>1</sup> processed through the Los Angeles County Superior Court during 1977 and 1978. As the figure shows, slightly more than half the cases were dismissed at the initial screening by the prosecutor or were referred to a lower court for misdemeanor prosecution. About 40% of the cases eventually get to the preliminary hearing stage, whereupon an additional ten percent are dismissed or referred to a lower court. Thus, only about a third of the initial arrests presented to the Los Angeles prosecutors even make it as far as the felony arraignment stage, and of the cases that reach arraignment, the largest share are resolved by guilty pleas without a trial. Of the total felony cases in Los Angeles for this period, only 4.2% eventually were adjudicated by trial. This pattern of case flow in the Los Angeles courts in the late 1970s replicates patterns of court dispositions found by Mather (1979) and Greenwood *et al.* (1976) in the same court system in the early 1970s. Similar proportions of case dispositions are also reported in the thirteen-city comparison undertaken by Brosi (1979: 9) and in the in-depth study of the New York City courts (Vera Institute, 1977). Thus, although our analysis is based on data from only one city, it does not appear that the pattern of case dispositions here differ extensively from those found in other large, metropolitan court systems.

Figure 12.1

Case Flow of the Los Angeles Superior Court



Our analysis of the effect of weapon use on felony case dispositions in Los Angeles begins with the assumption that a large number of variables affect case outcomes at each stage. In particular, the nature and seriousness of the charge, the strength of the evidence, prior record of the defendant, characteristics of the defendant, the case load being managed by the prosecution, the "convictability" of the case have all been shown to have an impact on case outcome. A unique feature of the Los Angeles PROMIS data base is that it contains enough detailed information on each case to allow one to model these various factors and to hold them constant in the empirical analysis. Thus, our estimates of the weapons effects are estimates net of the other many, potentially confounding, factors.

The major shortcoming of the Los Angeles PROMIS data for our research purposes is that the weapon variable is relatively crude. There is, in fact, only one weapon variable available in the data, with four categories: gun involved in offense, other weapon involved, no weapon involved, or unknown. This information is gathered by the police at the time of the arrest and provided by them to the prosecutor's office. Thus, this variable is independent of any decision by the prosecutor concerning any specific weapons-related charges. For the sample of 5000 felony charges, the distribution of this weapon variable is as follows:

Gun involved in offense	13.9%
Other weapon involved	9.8
No weapon involved	60.4
Unknown	15.9
	<hr/>
	100.0%

(N = 5000)

Notice that roughly a sixth of the total cases having missing information on the involvement of a weapon.<sup>2</sup> Notice further that the data base does not contain additional weapon information that might be important in ascertaining the effect of weapon use on case disposition: for example, whether the weapon was fired during the incident, only brandished, or was merely possessed by the offender at the time; nor any information on the caliber or type of weapon. Given that this information is not available, the analysis is necessarily rather crude. However, the fact that the weapon variable is independent of the specific crime charged provides a better description of any weapons effect than those studies which included such variables as "arrest charge includes possession of weapon charge" (Nagel et al. 1980) or "weapon recovered" (LaFree, 1980).

It is important to emphasize that all the cases considered in this analysis are felony cases, i.e., are relatively more serious crimes. Most of the weapons use represented in the data is weapons use in the context of committing some other crime, such as robbery or assault, for example. Illegal possession or use of firearms charges are rare in the data, constituting only 1.9% of the total charges. In the California Penal Code, section 12025 for example, carrying firearms without a license is a misdemeanor, unless the offender has been convicted previously of a felony. Since the seriousness of the charge is among the variables held constant in our statistical models, we have not analyzed each major crime category separately as others (e.g., Cook and Nagin, 1979) have done.

Findings from our analysis of Los Angeles felony dispositions, stage by stage, are as follows. First, we find a statistically significant and positive effect for gun use at the stage of initial prosecution screening.

That is, holding other relevant case and defendant characteristics constant, the probability that a case will be accepted for felony prosecution at initial screening is higher for a case involving a gun than if no weapon was used. On the whole, gun users are about 34% more likely to pass through the initial screening stage than are cases with no weapon. The effect for "other weapon" was insignificant at this stage. This weapon effect is independent of other seriousness measures such as the charge itself and whether the victim was injured during the incident. This finding is consistent with other court studies that have found that seriousness of the case is one of the strongest determinants of prosecution. Since the involvement of a gun is one element of the seriousness assessment made by the prosecutor, it is not surprising that the gun effect is found in our analysis. This finding also confirms that the Los Angeles prosecutors are accepting "serious" cases for felony prosecution as specified by policy statements by the District Attorney (Greenwood et al., 1976: 121).

Once a case has been accepted for prosecution as a felony, it goes to a preliminary hearing in which probable cause must be shown. Here too we find a positive and statistically significant gun effect. The probability of a case being accepted at the preliminary hearing is about 24% higher if a gun was involved in the offense than if no weapon was involved, regardless of the other case and defendant characteristics. And here too, the effect for "other weapon" was not significant.

In Los Angeles, then, the odds of a case passing through the preliminary stages of the felony court system and onto formal arraignment are substantially higher if a gun was involved in the crime than if there was no

weapons involvement. This, however, is not true for weapons other than guns. As to precisely why these effect operate, we can only speculate. In addition to the discretion of the prosecutor to accept more serious cases for felony prosecution, it may be that the gun used in the crime constitutes a piece of material evidence against the defendant that increase the "convictability" of the case, more convictable cases naturally passing through the system more easily than less convictable ones. However, this explanation should also hold for the "other weapons" cases (where a knife, for example, was involved) in which there would also be material evidence; but our analysis finds no significant effect for these cases.

Once the case is accepted at the preliminary hearing stage, it goes to the formal felony arraignment in Superior Court. At arraignment, the case may be dismissed, the defendant may plead guilty, or the case may be sent to trial. We find that the probability of a dismissal at the arraignment stage is not significantly affected by either gun or other weapon involvement in comparison to those cases with no weapon; all estimated coefficients are trivially small in magnitude and not statistically different from zero. Given the large percentage of cases dismissed at the earlier court stages, the dismissals of cases at this arraignment stage are probably due to technical reasons (such as witness problems) or legal problems (such as evidence problems) and not related to case characteristics.

How does weapons use influence whether the case is resolved by a guilty plea or adjudication by trial? Our analysis finds that felony cases where a gun was involved are less likely to plead guilty than offenders using no weapons, regardless of other case and defendant characteristics. The probability that the case went to trial after arraignment (rather than

being pled guilty) is about 30% higher for cases involving a gun than for those involving no weapons. (And here again, the effect of "other weapon" is weak and statistically insignificant). Unfortunately, it is difficult from the Los Angeles PROMIS data to tell which cases simply pled guilty and those that were plea-bargained. Thus, we are not sure if defendants whose offenses involved a weapon at the time, were less likely to plead guilty or if these defendants were less likely to have been offered a plea bargain by the prosecutor. Mather's (1979) analysis of plea bargaining in Los Angeles indicates that probably plea bargains are less likely to be offered to defendants who used a weapon because they are more serious cases.

Thus, in the Los Angeles criminal justice system, defendants who had a gun at the time of the offense (but not "other weapons") are more likely to pass through initial screening to the preliminary hearing, more likely to pass from the preliminary hearing to formal felony arraignment, and less likely to plead guilty (as opposed to going to trial). How are trial outcomes affected by the presence of a weapon during the crime?

Trial outcomes, of course, are of two sorts: first, the finding as to guilt or innocence, and then for the guilty, the sentence received for the convicted charge. Concerning the first, our analysis of Los Angeles felony trials finds no significant gun or other weapon effect on outcome: as it happens, gun offenders are about 19% more likely to be found guilty of the charge than are offenders using no weapons, but this effect does not quite pass the threshold of statistical significance.

Felons are judged guilty either by plea or by a trial finding; once judged guilty, they may receive a prison sentence or some other sentence

not involving prison (i.e., a suspended sentence, probation or fine).

Among felons who pled guilty, the probability of a prison or jail sentence (of any length) is very much higher if a weapon was involved in the case than if not. Gun offenders (that is, those convicted of a crime where a weapon was involved) are about 74% more likely to receive a prison sentence than offenders whose cases involved no weapons. Offenders whose cases involved "other weapons" are, likewise about 45% more likely to be incarcerated in comparison to those with no weapon involvement.

Much the same is true for felons found guilty by trial. Among cases involving a gun, the probability of incarceration is about 67% higher than among offenders convicted at trial whose cases involved no weapon. For users of other weapons, the odds of doing time are about 33% higher. All effects of weapons on the probability of prison or jail sentence are statistically significant and are net of the other variables pertaining to the case and defendant.

Finally, we may inquire into the effects of weapons use on length of sentence received. Among felons found guilty at trial, the gun effect is quite substantial: all else equal, the involvement of a gun in the felony increases the average prison or jail sentence by close to 600 days for those sentenced to prison or jail. In contrast, the "extra time" for those cases involving "other weapons" the effect is only about 30 days (and not statistically significant). Both of these effects are in comparison to those cases involving no weapons and are independent of the other case and defendant factors in the regression equation.

Among felons who pled guilty and were sentenced to prison, the gun effect is also quite substantial, although less so than for those found guilty at trial. The gun effect was about 400 extra days of sentence

time. Also the effect for involvement of "other weapon" was substantial and significant among those pleading guilty and sentenced, amounting to about 240 extra days, in comparison to those cases involving no weapons.

For both guilty pleas and guilty findings, then, it is apparent that substantially stiffer prison sentences were meted out to those convicted of felonies involving a gun in comparison to offenders using no weapons, even with other potentially relevant factors held constant. This gun effect at sentencing is not surprising in the Los Angeles court system because the California Penal Code specifies sentencing enhancements of one to two years for felonies committed with the use of a firearm. However, this analysis confirms that the legislated sentence enhancements are being implemented by the courts.

At the earlier stages of the court process, it is also clear that the prosecutors in Los Angeles pay considerable attention to those cases in which a gun was involved. Gun offenders were more likely than non-gun offenders to pass through all of the criminal justice system stages, regardless of other factors which measure the seriousness of the case, such as the charge and injury to the victim. The involvement of a gun in a felony case adds an additional element of seriousness to the case to which the Los Angeles court system responds.

Whether the same weapons effect is also found in other jurisdictions is less obvious. Bernstein and her associates (1979) have analyzed the dispositions of about 3,000 cases of persons arraigned in the state criminal or supreme court in New York during the winter of 1974-1975. The cases investigated were all felonies or serious misdemeanors. Unfortunately, the data apparently do not contain any information on whether a gun (or other

weapon) was present during the commission of each crime, but there is a dummy variable which indicates whether the arrest charge included any "illegal possession of weapon" charge (along with any other charges made in the case). The presence of an illegal possession charge had no significant effect on the probability of dismissal, but a slight positive effect on the probability of being imprisoned (see, e.g., Bernstein et al., 1979: 345). Since this study used a weapons charge variable (which the prosecutor has discretion to include or not), it is not surprising that no weapons effect is found on the probability of dismissal; those cases that were less serious and may have been more likely to be dismissed may also be the ones that the prosecutor did not bother to add the weapon possession charge.

Burr (1977) has produced some interesting information about the sentencing of gun-related felonies in his study in Florida. Florida courts as stipulated in the Glisson Amendment must give mandatory prison sentences for the use of a firearm in specific felony offenses, with the mandatory sentence length set at between three years and life, according to judicial discretion. Burr's data consists of interviews with several hundred felony offenders who had used firearms in the commission of their convicted crimes.

One of Burr's questions asked whether offenders were aware of the mandatory sentence law at the time of their offense; 83% of the felons said that they were. Some 73% said that they would continue carrying firearms once released from prison, despite the Amendment. More relevant to the issues of this chapter, Burr also inquired into the uniformity with which the Amendment was being applied by the judiciary throughout the

state. Over roughly a one-year period, Burr reports, there were about 525 felonies committed in Florida that were apparently prosecutable under the Glisson Amendment, of which only slightly more than half were actually given the mandatory add-on sentence (1977:24). "This information strongly suggests that the law is not being uniformly applied by members of the judiciary." (On the issue of how gun control measures are actually implemented and their effects, see also Chapter Fifteen, below.)

The only other detailed evidence on the treatment of weapons offenders in the criminal court system is that reported by Cook and Nagin (1979) for the Washington, D.C. court system. As with the Los Angeles analysis summarized above, the Cook and Nagin research is based on data generated under the Prosecutor's Management Information system (PROMIS); also similar to Los Angeles, the Washington D.C. prosecutor's office has an official "gun emphasis" policy.

Cook and Nagin note, "It is the announced policy of the District's prosecutor to give priority to weapons cases, and the District's Criminal Code specifies sentencing enhancements for such cases" (1979: 45). These, of course, are what may be called policies-in-principle. How these policies get implemented in the Washington D.C. courts in an open empirical question, one to which the Cook and Nagin research is addressed.

Zero-order results in Washington D.C. are similar to the results for Los Angeles described earlier. "For each of the four types of violent crime (murder, rape, robbery, and assault), a higher proportion of gun defendants are convicted than unarmed defendants. In addition, gun defendants are more likely to be incarcerated than those convicted of unarmed crimes of violence. Conviction and incarceration rates for defendants

accused of violent crimes involving other weapons are in most crime categories quite close to conviction and incarceration rates for gun defendants" (1979: 45). This latter finding contrasts sharply with the LA results; in Los Angeles, those using "other weapons" were rarely treated differently from those using no weapons at all.

These Cook and Nagin results are, to emphasize again, zero-order findings, and none of the many variables other than weapons use that might affect case disposition were held constant. Thus, they are not adequate to determine the precise relationship between weapons choice and case disposition. There are no multivariate analyses reported concerning rape, assault, or murder cases, but an extensive multivariate analysis of the robbery cases is presented.

The weapons effect apparent at the zero-order level also appears in the multivariate results for robbery cases, with some exceptions. First, given that a case has been accepted for prosecution, there are no statistically significant differences in the probabilities of conviction according to the type of weapon used, once other relevant variables are held constant. This result was also found for all felony cases in the Los Angeles criminal courts. However, the probability of receiving a felony (vs. a misdemeanor) conviction is significantly higher for armed than unarmed robberies; so too is the probability of a prison sentence, given that one has been convicted. Finally, armed robbers who receive prison sentences tend, on the average, to receive longer sentences than do unarmed robbers; the average for armed robbers was 51 months vs. an average of 29 months for unarmed robbers (1979: 57). The only sustained difference between these results and those from Los Angeles is that in

Washington D.C. defendants using weapons other than guns were treated virtually the same as gun-using defendants (opposite to the pattern observed in LA). It would thus appear that the Los Angeles prosecutor has a gun-emphasis policy which contrasts perhaps in important respects with the weapons-emphasis policy observed in Washington D.C.

The few studies reviewed in this chapter summarize, to our knowledge, the available literature on what happens to weapons offenders once they are apprehended and sent into the criminal court system. There are no nationally representative data relevant to this issue, and, as this review makes clear, there are only a very small number of studies focused on particular jurisdictions. In the few jurisdictions that have been studied in depth, there appears to be considerable attention paid to those cases involving weapons by the prosecutors and judges in the criminal courts, but there have been too few jurisdictions studied to have confidence that this is also true nationwide. The need for further research on how weapons offenders fare in the criminal courts is transparent, especially the need for comparative study that examines relatively large numbers of jurisdictions simultaneously. As the PROMIS system (and similar computer-based management information systems) become more widely used, the feasibility of such research will greatly increase.

FOOTNOTES

1. A total of 79,885 felony cases were processed by the Los Angeles County Superior Court system between January 1977 and July 1978. Cases that were initially charged after this date were excluded from our analysis because many were still open - that is, they had not yet reached their final disposition.

The analysis of the disposition of cases is based on data from the Los Angeles PROMIS (Prosecutor's Management Information System) which provides a computerized record of both the case and defendant characteristics and the history of the case through the criminal courts (including such information as court events, multiple charges, and final disposition).

The analysis of the outcomes of each stage of the court process is based on a random sample of 5000 cases active at that stage. A more detailed description of data, sampling and analysis is found in the full report (Rossi et al., 1981).

2. Because of the large amount of missing information (on the weapon variable and other variables - such as employment of the defendant, prior record, etc.), we did not exclude "missing cases" but instead included them in the regressions as dummy variables. In the case of the weapon variable, three dummy variables were included in the regressions, 1) gun involved, 2) other weapon involved, and 3) missing information on weapon. The excluded category was, thus, those cases where it was known, for sure, that there was no weapon involved, and the "gun effect" is in comparison to this excluded category.

CHAPTER THIRTEEN  
PUBLIC OPINION AND GUN CONTROL<sup>1</sup>

"Majorities of American voters believe that we do not need more laws governing the possession and use of firearms and that more firearms laws would not result in a decrease in the crime rate."

"It is clear that the vast majority of the public (both those who live with handguns and those who do not) want handgun licensing and registration. (...) [T]he American public wants some form of handgun control legislation."

As the preceding and apparently contradictory assertions demonstrate, the state of public thinking on the issues discussed in this volume is a matter of considerable debate, with both the proponents and opponents of stricter gun controls claiming the weight of majority opinion for their position. In itself, this is hardly remarkable: polemicists and advocates make frequent and routine use of phrases such as "public opinion," "most Americans," or the "vast majority" as symbolic and rhetorical devices. But in the present case, both sides also lay claim to a body of supporting evidence which is said to demonstrate that "public opinion" is favorable to their point of view. A detailed review of some of this evidence is thus the topic of the present chapter.

Our attention focusses specifically on two rather large-scale national opinion polls conducted in 1978. The opening passages quoted above are from the Executive Summaries of the two reports in which the

poll findings are presented. The first passage is from a report entitled, "Attitudes of the American Electorate Toward Gun Control 1978." The report was prepared by Decision Making Information, Inc., of Santa Ana, California, a private for-profit research and polling firm. The report is based on a national survey conducted during 1978 (actually, DMI conducted two surveys for the report; see below) and it was commissioned by the National Rifle Association.

The second passage is from a report entitled, "An Analysis of Public Attitudes Toward Handgun Control," prepared by Cambridge Reports, Inc., Patrick Caddell's political polling firm. The Caddell report is also based on a large national survey conducted in 1978, and was commissioned by the Philadelphia-based Center for the Study and Prevention of Handgun Violence.<sup>2</sup>

Findings from the DMI polls have been cited and discussed in several of the previous chapters. Also, in Chapter Seven, findings from both polls on the uses of private weaponry were compared. Here we focus more specifically on the evidence from the two surveys that pertains to public opinion about various aspects of guns and gun control.

This chapter is not a review of the published literature on public opinion and gun control per se, although some findings from this literature are noted where appropriate. Capable literature reviews in the area already exist; see the sources cited in footnote nine. Our focus here is specifically on the comparison of results between the DMI and Caddell polls. A detailed comparison of the results of these two opinion surveys is instructive for several reasons. Of these, the most important involves the substance of the issue, namely, whether "most

Americans" do or do not favor stricter weapons controls. Together, the two reports are nearly encyclopedic in their coverage of contemporary public opinion on weapons-related issues. As we show below, the comparison of results across surveys demonstrates that the majority opinion depends critically on the specific kinds of "stricter controls" envisioned, the likely costs and the end purposes that additional controls are meant to serve.

A subsidiary aim of the comparison is to evaluate what we will call the "anti-survey hypothesis," which, at the most general level, states that surveys in essence create the "reality" they purport to measure. The general idea behind this hypothesis is that there is really no such thing as "public opinion" except as it is called into being by public opinion polls; respondents, it is said, simply "manufacture" the answers they think the investigators want to hear. The kinds of answers one gets are thus (or perhaps, can be) predetermined by the advance hypotheses or political purposes of the investigators: one needs only to design the study in such a way as to generate whatever response one or one's client wishes to hear. The alternative possibility, of course, is that there is an underlying reality to public opinion, a reality that will tend to surface despite the a priori expectations, aims, or purposes of the researchers or their sponsors. A comparison between these two surveys thus provides a unique opportunity to consider whether and how poll findings are "biased" by the outlooks and ideologies of the organizations who conduct research or by the clients who pay for it.<sup>3</sup>

#### Technical Comparisons

Neither report was prepared for an academic audience; as such, the

amount of technical information provided about the two surveys is meager. So far as can be told, however, both surveys were competently done and both appear to have been conducted well within the current standards and practices of survey research.

The Caddell survey is based on a national probability sample of adults aged 18 and over. The data consist of 1500 personal interviews conducted between April 20 and May 15, 1978, by Caddell's professional interviewing staff. No information about the response rate or field procedures is given. In addition to the textual narrative, the Caddell report includes a verbatim copy of the questionnaire with all marginal results displayed, including the coded marginal responses to various open-ended questions. The report also provides a package of cross-tabulations of main dependent variables with sex, race, age, education, income, union membership, religion, region, and a few other background variables. No analysis more complex than two variable crosstabulations is discussed or presented in the report.

The DMI report is based on two surveys, both involving nationally representative samples of registered voters (rather than of all adults). The first consists of 1500 personal interviews conducted between May 19 and June 9, 1978, by DMI's professional interviewing staff.<sup>4</sup> (Note, then, that DMI's surveying began just four days after Caddell's ended.) The sample of registered voters was achieved by an initial filter question; persons not currently registered to vote (or with no intention of registering before the November 1978 elections) were terminated from the interview. The second survey, also of registered voters, consisted of 1,010 telephone interviews conducted during December 9-12; again, an initial filter question was used to determine eligibility for the sample.<sup>5</sup>

No response rate information is given for either DMI survey; some information on sample design and field operations is presented, however, and this information suggests that sound research procedures were employed. Unlike the Caddell report, the DMI report presents confidence limits for the results. The DMI report also contains a glossary defining technical terms used in the report, verbatim copies of both questionnaires showing all marginal results (including coded responses to various open-ended questions), but contains no additional tabulations other than those presented and discussed in the textual narrative. As in the Caddell report, no analysis more complex than two-variable crosstabulations is presented or discussed.

There is an important difference in the substantive foci of the two reports: the Caddell report focusses almost exclusively on handguns, whereas the DMI report deals with handguns and long guns, which are then kept separate in the analysis.

Table 13-1 compares the sample demographics obtained in the two surveys; the table also shows comparable figures from the March 1978 Current Population Survey. Because of the additional complexities introduced by telephone samples, the DMI data shown in the table are for their face-to-face survey only. It is apparent that both surveys achieve demographic distributions that are respectably close to the "true" values (as indicated by the CPS data). The major differences between the surveys are all in the direction one would expect given the initial difference in sampling frames, the DMI registered voters sample, that is, is somewhat older, whiter, and more "middle class" than Caddell's sample of U.S. adults, and all of these variables are known to be related to whether

TABLE 13-1

SAMPLE DEMOGRAPHICS FOR THE DMI AND CADDELL SURVEYS<sup>a</sup>

<u>Age</u> <sup>c</sup>	<u>DMI</u> <sup>b</sup>	<u>CADDELL</u>	<u>March 1978 CPS</u> <sup>f</sup>
18-24	12%	19	18
25-34	25	22	22
35-44	15	17	15
45-54	14	14	15
55-64	17	14	14
65 and over	17	14	15
<u>Sex</u>			
Male	50%	51	49
Female	50	49	51
<u>Education</u>			
Less than High School	22%	28	33
High School Graduate	35	41 <sup>d</sup>	36
Some College	25	19	17
College Graduate	18	13	14
<u>Race</u>			
White	89%	84	83
Non-White	11	16	17
<u>Average Family Income</u> <sup>e</sup>	\$16,250	\$15,446	\$16,010

<sup>a</sup>Because of differences between the two surveys in terms of demographic questions asked and the response categories in which responses are coded, the variables shown in the table exhaust the direct demographic comparisons that are possible between the surveys.

<sup>b</sup>DMI data shown here are for the face-to-face survey only. (The telephone survey introduces additional biases related to the tendency to own a telephone that would obscure the direct comparisons being made here.)

<sup>c</sup>These are the DMI age categories; the Caddell categories are "off" by one year (thus, the figure shown in the first line under "CADDELL" is the proportion 18-25, not 18-24; and in the second line, 26-35 rather than 25-34, etc.).

Table 13-1 (continued)

<sup>d</sup>Includes "high school graduates" (37%) and "technical/vocational" (4%).

<sup>e</sup>Neither report gives an average family income figure; the numbers shown here are means calculated from percentaged income distributions. The percentaged income data from each survey are as follows:

<u>DMI</u>	<u>Income Category</u>	<u>Assumed Midpoint</u>	<u>Percentage</u>
	Less than 5000	2500	15
	5000-9999	7500	17
	10000-14999	12500	18
	15000-19999	17500	18
	20000-29999	25000	20
	30000 and up	35000	12
			100%
			(N = 1500)
<u>CADDELL</u>			
	Less than 4000	2000	6
	4000-6999	5500	9
	7000-9999	8500	9
	10000-12999	11500	11
	13000-14999	14000	10
	15000-19999	17500	15
	20000-24999	22500	10
	25000 and up	30000	13
			83%
			(N = 1500)

Note, then, that the Caddell survey apparently generates 17% missing data on income, whereas in the DMI survey, the missing data on income are apparently omitted from the frequency distribution. The mean income for the Caddell survey reported in the table is thus based on an effective N of 1,245 (= .83 x 1500).

<sup>f</sup>Source: Current Population Reports. Population Characteristics, 1978 (#336), April 1979.

one is registered to vote.<sup>6</sup>

Social status is also correlated with the tendency to own a weapon (see Chapter Six) and with attitudes towards gun control; in general, both weapons ownership and opposition to stricter weapons controls increase with social status.<sup>7</sup> For this reason alone, we would thus expect the DMI sample to be somewhat less supportive of gun control measures than the Caddell sample. However, the magnitude of the differences introduced by this factor should not be large, first because the SES differences between the surveys are themselves modest and secondly because the correlation of gun control attitudes with SES is relatively weak (in the range of .1 to .2).<sup>8</sup>

#### Comparisons of Substantive Findings

Pollsters have been measuring gun control opinions in the United States since at least 1938; in the Gallup poll of that year, 79% of the public said it favored "gun control," and most surveys and polls conducted since then have reported more or less similar results. Erskine (1972) has reviewed the poll data on the topic from 1938 through 1972 and reports, "the vast majority of Americans have favored some kind of action for the control of civilian firearms at least as long as modern polling has been in existence." The best-known "gun control" question was instituted by Gallup in 1959; it reads, "would you favor or oppose a law which would require a person to obtain a police permit before he or she could buy a gun?" The proportion favoring such a law stood at 75% in 1959 and has varied from 68% to 78% in all Gallup polls since. NORC has included the identical item in its annual General Social Survey;

from 1972 through 1977, the proportion in favor of such a law varied between 70% and 75%.<sup>9</sup>

The other poll materials reviewed by Erskine, however, do not all uniformly suggest the same high pro-control percentages that are routinely revealed in the "police permit" question. One item from an Opinion Research Center poll for 1968, for example, asked "do you think that people like yourself have to be prepared to defend their homes against crime and violence, or can the police take care of that?" Somewhat more than half the sample (52%) felt that people should "be prepared," and only 40% thought that such matters could be left to the police. In 1971, Harris asked a similar question: "Do you tend to agree or disagree that the way things are today, people should own guns for their own protection?" Forty-nine percent of the sample agreed with this viewpoint, 43% disagreed, and the remainder had no opinion. And in March, 1968, Harris also found that 51% of the U.S. population would "use your gun to shoot other people in case of a riot." The same Harris poll also found 93% of the population agreeing that "individual shootings can happen any time because it only takes one madman to shoot another man" and a 50-50 split on the statement, "control of guns might not cut down on violence at all."

The lesson to be learned here, rather an obvious one, is that public opinion is not "of a piece" on the gun control issue; as in all other areas of public opinion measurement, different questions, posed in different ways, and dealing with different aspects of the issue, generate somewhat different results. A second lesson, also obvious, is that with some selective picking and choosing among topics, questions,

and phrasings, one can elicit a very wide range of results. This "wide range," of course, does not imply that public opinion is ephemeral or ill-formed, but rather that the issue itself is complex and multi-faceted.

Tables 13-2 and 13-3 display the question wordings and marginal results for all items from the two surveys bearing on opinions about gun control; the Caddell data are shown in Table 13-2, and the DMI data in Table 13-3.<sup>10</sup> Items are shown in the table in the order in which they were presented to respondents, although other items (not shown in the table) often intervene between those shown contiguously here; thus, the item numbers in the tables are given for ease of reference only. In Table 13-3, items 1 through 23 are from the DMI face-to-face survey, and 24 through 31 are from the telephone survey. Where it seems to matter, we also show the question "lead-ins" as well as the questions themselves. Finally, all numbers in the table are reported exactly as they appear in the respective reports, whether they add up to 100% or include the missing data, or not.

The first notable aspect of the two tables is that, although both surveys are ostensibly about the same topic, there are very few items common to both surveys. (The few exceptions are discussed below.) This again confirms that public opinion on gun control is sufficiently multi-faceted that two entire surveys can be done on the topic and still touch relatively little common ground. The relative absence of items common to both surveys also intimates some "selectivity" on the part of both organizations as to the facets of gun control opinion they wish to explore, an intimation confirmed below.

TABLE 13-2  
PUBLIC OPINION ON GUN CONTROL: RESULTS FROM THE  
CADELL SURVEY

Here are some specific proposals that have been made for controlling handgun violence. Would you tell me whether you strongly favor, somewhat favor, somewhat oppose, or strongly oppose each proposal with respect to civilians only. Law enforcement personnel would not be affected.

	Strongly Favor	Somewhat Favor	Somewhat Oppose	Strongly Oppose	Don't Know
1. A crackdown on illegal sales.	72%	13	5	6	5
2. Strengthening the rules for becoming a commercial handgun dealer.	63%	18	7	5	7
3. Institute a waiting period before a handgun can be purchased to allow for a criminal records check.	74%	14	4	3	5
4. Require prospective handgun purchasers to get a permit or license to purchase.	65%	17	7	7	5
5. Require the registration of all handguns at the time of purchase or transfer.	67%	17	5	7	5
6. Require the registration of all handguns now owned.	57%	17	9	11	6
7. Require a license to own a handgun at all.	58%	16	10	11	6
8. Make the rules for a license to own a handgun stricter.	55%	17	10	11	8
9. Require a license to carry a handgun outside of one's house or business.	61%	18	8	8	6

Table 13-2 (continued)

10. Make the rules for getting a license to carry a handgun (...) strict.	57%	19	9	10	5
11. Require mandatory prison sentences for all persons using a gun in a crime.	68%	15	6	6	6
12. Require mandatory prison sentences for all persons carrying a handgun (...) without a license.	38%	17	17	21	8
13. Ban the future manufacture and sale of non-sporting type handguns.	33%	15	20	21	11
14. Ban the future manufacture and sale of cheap, low-quality handguns.	54%	16	10	13	7
15. Ban the future manufacture and sale of all handguns.	23%	9	22	36	10
16. Use public funds to buy back and destroy existing handguns on a voluntary basis.	22%	11	19	37	11
17. Use public funds to buy back and destroy existing handguns on a mandatory basis.	19%	7	17	45	12

18. On [this card] are the phrases "favor banning all private ownership of handguns" and "oppose banning all private ownership of handguns, separated by seven blank spaces. I would like you to place yourself on the blank which best represents your position between the two opinions.

FAVOR BANNING	1	17%
	2	6
	3	8
NEUTRAL	4	18
	5	8
	6	10
OPPOSE BANNING	7	33

Table 13-2 (continued)

19. Do you think it is possible to have effective controls on handguns without having controls on long guns, such as rifles and shotguns, or not?

YES	37%
NOT SURE	23
NO	40

The following are a number of arguments which are raised both for and against handgun control. Can you tell me if you strongly agree, agree, disagree, or strongly disagree with each one.

	Strongly Agree	Agree	Disagree	Strongly Disagree	Don't Know
20. Requiring all handgun owners to be licensed would prevent law-abiding citizens from protecting themselves.	21%	19	37	15	9
21. Requiring all handgun owners to be licensed would reduce crime.	21%	28	28	14	10
22. Requiring all handgun owners to be licensed would violate people's constitutional rights.	17%	19	37	16	11
23. Requiring all handgun owners to be licensed is just another step by government to interfere in people's lives and limit their freedom.	18%	19	36	17	11
24. Requiring all handgun owners to be licensed would cut down on the number of violent crimes.	22%	28	26	14	10
25. Requiring all handgun owners to be licensed is just the first step in confiscating all guns, including shotguns.	19%	20	35	12	15

**CONTINUED**

**5 OF 7**

Table 13-2 (continued)

26. Requiring all handgun owners to be licensed is a good idea because it will defuse the pressure for total gun control.	17%	30	24	9	21
-----					
27. Would you be much more inclined, somewhat more inclined, somewhat less inclined, or much less inclined to vote for a candidate who favored handgun controls?					
MUCH MORE		22%			
SOMEWHAT MORE		27			
SOMEWHAT LESS		15			
MUCH LESS		13			
DON'T KNOW		23			
28. Would you agree or disagree with the following statements: I would never vote for a political candidate who favored banning the sale of all handguns to private citizens.					
AGREE		37			
DON'T KNOW		24			
DISAGREE		40			
29. Gun control laws affect only law-abiding citizens; criminals will always be able to find guns.					
AGREE		78			
DON'T KNOW		10			
DISAGREE		13			
30. The only way to control handguns is by Federal law; state laws which allow them to be purchased in some states and not others are ineffective.					
AGREE		70			
DON'T KNOW		17			
DISAGREE		14			

TABLE 13-3

PUBLIC OPINION ON GUN CONTROL:  
RESULTS FROM THE DMI SURVEYS

Here is a list of various crimes. Look it over, please, and then tell me which three of these kinds of crimes you yourself are most afraid of for yourself and your family.

	FIRST CHOICE	SECOND CHOICE	THIRD CHOICE
1. Murder by a friend or relative.	6%	3%	4%
2. Murder in the course of robbery, burglary, or another crime.	34	16	13
3. Rape.	16	20	13
4. Robbery, Mugging.	17	26	23
5. Burglary, Theft.	19	21	19
6. Vandalism.	8	11	20
7. Fraud, embezzlement, or forgery.	2	3	8

In recent years, there has been some attention paid to the laws about who can or cannot own a gun, and what kinds of guns people can buy.

8. In general, would you say there are: Already too many laws governing the possession and use of firearms, the present laws are about right, or that we need more laws?

ALREADY TOO MANY	13%
ABOUT RIGHT	41
NEED MORE	44
DON'T KNOW	2

9. And, if there were to be more firearms laws, would you expect the crime rate to decrease or increase? And would you expect that [INCREASE/DECREASE] to be large or small?

LARGE INCREASE	6
SMALL INCREASE	10
STAY THE SAME	41
SMALL DECREASE	33
LARGE DECREASE	10

Table 13-3 (continued)

Sometimes the government asks us to report or give up something, with varying degrees of success.

	<u>ALL</u>	<u>MOST</u>	<u>HALF</u>	<u>SOME</u>	<u>NONE</u>
10. Suppose a law was passed that [OUTLAWED SMOKING IN] public places. How many smokers do you think would comply?	8%	26	24	35	7
11. ...prohibiting the sale or manufacture of hard liquor in your state. How many drinkers ...do you think would stop drinking?	--	4%	10	47	39
12. ...requiring people to register their guns with the Federal government. How many gun owners do you think would comply?	4%	25	28	39	4
13. ...requiring people who wanted to sell or trade a gun or give one as a gift or bequest to do so through a licensed dealer and with a delay of three weeks, how many gun owners do you think would comply?	3%	21	26	43	7
14. If a law was passed requiring people to turn in all their handguns to the Federal government, how many (...) would comply?	--	4%	15	62	18

I would like to read you some statements that others have made. For each one, would you please tell me to what extent you agree or disagree with it...

	<u>STRONGLY AGREE</u>	<u>AGREE</u>	<u>DISAGREE</u>	<u>STRONGLY DISAGREE</u>
15. Occasional domestic shootings are tragic, but do not justify taking away the right of everyone to own a handgun.	20%	52%	22%	6%

Table 13-3 (continued)

16. A national gun registration program might well eventually lead to the confiscation of registered firearms by the government.	12%	39	41	8
17. No private individual should be allowed to own a handgun.	5%	11	46	38
18. Registration of handguns will not prevent criminals from acquiring or using them for illegal purposes.	48%	43	8	2
19. Anyone having a gun while committing a violent crime should receive a severe and mandatory prison sentence.	53%	40	6	1
20. Most people who have guns in their home feel safer because of it.	22%	61	16	1
21. Prohibiting private possession of handguns will not lead to prohibiting all types of guns.	9%	53	31	6
-----				
22. Do you believe that you, as a citizen, have a right to own a gun, or not?				
	YES	89%		
	NO	11		
23. Do you believe that the Constitution of the United States gives you the right to keep and bear arms, or not?				
	YES	87%		
	NO	11		
	DON'T KNOW	2		
-----				
24. Would you favor or oppose a law giving police the power to decide who may or may not own a firearm?				
	FAVOR	29%		
	OPPOSE	69		
	DON'T KNOW	3		

Table 13-3 (continued)

25. As you know, about \$20 billion is currently spent annually by Federal, state, and local governments on crime control or for such things as police, courts, and prisons. It has been estimated that a national gun registration program would cost about \$4 billion per year, or about 20% of all dollars now spent on crime control.

Would you favor or oppose the Federal government's spending \$4 billion to enact a gun registration program?

FAVOR	37%
OPPOSE	61
DON'T KNOW	2

26. Mr. Smith says he wouldn't mind government files being kept about his credit ratings, income, gun ownership, or medical reports. Mr. Jones is concerned about his loss of privacy if his personal information is kept in Federal or other government computers. [WHICH ONE DO YOU AGREE WITH?]

EXACTLY LIKE SMITH	12%
LEAN TOWARDS SMITH	16
LEAN TOWARDS JONES	34
EXACTLY LIKE JONES	37
DON'T KNOW	1

I would like to read you some statements that others have made. For each one, would you please tell me to what extent you agree or disagree with it...

	<u>STRONGLY</u> <u>AGREE</u>	<u>AGREE</u>	<u>DISAGREE</u>	<u>STRONGLY</u> <u>DISAGREE</u>	<u>DON'T</u> <u>KNOW</u>
27. No private individual should be allowed to own a handgun.	5%	12	52	31	1
28. Registration of handguns will not prevent criminals (see #18).	42%	43	11	3	1
29. Assassination attempts on public officials could be avoided by banning private ownership of handguns.	4%	14	52	29	2
30. Anyone using a gun while committing a violent crime should receive a severe and mandatory prison sentence.	59%	34	5	1	2

Table 13-3 (continued)

31. Do you believe that you, as a citizen, have a right to own a gun or not?

YES	87%
NO	12
DON'T KNOW	1

(I) Opinions on Specific Control Measures

Caddell has the more extensive question sequence on opinions about specific handgun control measures (CADDELL 1-17), DMI's questionnaires, surprisingly, contain rather little along these lines. The Caddell sequence is prefaced with a lead-in stipulating that the measures in question are to the end of "controlling handgun violence" and does not mention the control of crime. As in most prior polls on the topic, Caddell finds large majorities favoring most, but not all, of the control measures asked about.

Some of the larger of Caddell's majorities are registered for relatively innocuous "easy-to-agree-with" items. We should not be surprised to learn, for example, that some 85% would favor a "crackdown on illegal sales," since cracking down on anything illegal is bound to enjoy sizable majority support. Strengthening existing regulations or making them stricter is also something that most people would presumably find easy to support -- for instance "the rules for becoming a commercial handgun dealer" (81% favor making them stronger) or the rules for owning or carrying a handgun (72% and 76%, respectively, favor making them more strict). "Toughening up" existing regulations and laws is what one might call a "Why Not?" item: the surprising finding from such items is not that so many people say they favor them, but rather that anybody says they do not.

Another useful point to keep in mind in this context is that many people may not be knowledgeable about just what the existing laws entail. An earlier (1975) survey by DMI revealed, in fact, a sizable degree of misinformation on the matter, and our own work in the area

(see Chapter 14) confirms that it is sometimes very difficult to figure out just what the law is. If the public is in general ill-informed about the existing laws, rules, and regulations governing the ownership and use of weapons, then their opinion that the existing measures should be "toughened up" is rather difficult to interpret meaningfully.

All of the measures offered in the Caddell sequence that deal with permits to own handguns or registration of handguns also receive sizable majority support. Some 82%, for example, favor requiring a permit or license in order to buy a handgun and 84% would favor the registration of such handguns at the time of purchase; as for the handguns now in private hands, 74% would favor requiring a license for them and the same percentage would also favor their registration. 79% favor requiring a permit to carry a handgun outside the home, and 88% also like the idea of some "waiting period" as a part of the permit/registration process, "to allow for a criminal records check." These findings are all very similar to the findings from the Gallup "police permit" item.

One should be wary, however, of reading more into these results than is warranted. First, many states and local communities already have laws on the books that are similar to the measures discussed in the previous passage. Cook and Blöse (1981), for example, report that about two-thirds of the U.S. population already reside in jurisdictions that require handgun buyers to be screened by the police. Many of the sizable majorities obtained in the Caddell sequence, that is, may reflect more an endorsement of status quo conditions than a demand for new and more restrictive gun laws. Further, the specific measures being supported are all similar to measures taken to control other

potentially lethal items whose use by irresponsible or incompetent persons might lead to injury or harm. Perhaps there is a metaphorical parallel that can be drawn here to the private automobile: all legally owned automobiles are registered with state governments, and all states require a license or a permit before one is allowed to drive. Likewise, or so the substantial majority seem to be saying, all privately owned handguns should also be registered, and one ought to be required to get a permit or a license to own or use them. What these data suggest, in short, is that most people feel that the ownership and use of handguns ought to be taken at least as seriously by governments as the ownership and use of automobiles is.

Measures more extreme than those currently used to regulate automobile ownership and use, in general, do not enjoy much public support. Substantial majorities, for example, oppose a "buy back" law, such as was tried once in Baltimore and a few other places, either on a voluntary or mandatory basis. The idea of an outright ban on the manufacture, sale, or ownership of handguns is likewise rejected by sizable majorities, with the exception of a ban on the manufacture and sale of "cheap, low quality handguns," which is favored by 70%. (In this context, it would be useful to know how many people would favor a ban on the future manufacture and sale of cheap, low quality automobiles, or for that matter, "cheap and low quality" anything.)

There is very little in either DMI survey to compare with these results from Caddell. One item (DMI-8) shows that 13% feel there are already too many laws governing the possession and use of firearms; these, or so one presumes, are the same people who fall among the 10-20% opposing each of the Caddell registration and permit items already

discussed. Some 41% say that "the present laws are about right" and 44% feel we need even more laws along these lines. Since the DMI question does not say anything about just what additional laws they have in mind, one hardly knows what to make of the result; many of the Caddell items suggest measures similar to ones already in force (or a strengthening of those already in force), so the 41% who feel that the present laws are about right is by no means inconsistent with the large majorities who favor many of the measures from the Caddell sequence. (The finding from "Do we need more laws?" figures very prominently in the DMI report and is, indeed, the finding being summarized in the opening DMI quotation in this chapter: "majorities...believe that we do not need more laws...")<sup>11</sup>

DMI also shows a substantial 69% majority opposing "a law giving police the power to decide who may or may not own a firearm" (DMI-24). This is DMI's version of the standard Gallup item, which asks about a law that would require "a person to obtain a police permit before he or she could buy a gun." But again, there is no fundamental inconsistency between the DMI result and the result typically obtained with the Gallup item: requiring a police permit in order to purchase a weapon (which a sizable majority favors) is obviously not the same thing as giving police the power to decide who may or may not own a gun (which a sizable majority opposes). As is the case for most other permit mechanisms (for example, permit to use explosives or have a parade), legislatures or other democratically elected bodies set the criteria by which the decision is made, and the function of the police is to determine whether the criteria are satisfied and to issue the permit if they are.

The only other DMI item that relates directly to any of the Caddell

items so far discussed is DMI-25, the item showing that 61% of the electorate would oppose "the Federal government's spending \$4 billion to enact a gun registration program." But there is again no inconsistency in wanting some sort of registration or permit system and not wanting it to cost \$4 billion. The DMI item serves the useful purpose of convincing us that the public does not want a registration system at any price, only that they (or rather, some three-quarters of them, according to the relevant Caddell items) want it at some price less than \$4 billion.

(II) Banning the Manufacture, Sale or Ownership of Weapons

Of the many available options for stricter gun controls, the only one asked about directly in both surveys is that dealing with an outright ban on the private ownership of handguns. Again, Caddell has the more extensive question series; there are three Caddell items dealing with bans on the manufacture and sale of handguns and one dealing with a ban on private ownership of same; DMI asked a question about banning handgun ownership in both the face-to-face and telephone surveys.

As noted previously, some 70% of the adult population would apparently favor a ban on the manufacture and sale of "Saturday Night Specials;" a much lower percentage, but interestingly, still a plurality, would "ban the future manufacture and sale of non-sporting type handguns" (48% favor this ban, 41% oppose it, and the remainder have no opinion). As for banning "the future manufacture and sale of all handguns," however, the majority is opposed: 32% favor such a ban, 58% oppose it, and the remainder have no opinion.

Only a minority would favor an outright ban on the private ownership of all handguns. In the Caddell survey (CADDELL-18), 31% of the popula-

tion say they would favor such a ban, 18% are "neutral," and 51% say they are opposed. Recalculating the results with the "neutrals" omitted, we get a 62-38% split against an outright ban on private ownership of handguns. The comparable DMI item is rather different: it offers no "neutral" category and is framed as an "agree-disagree" item. (The Caddell item, in contrast, is a seven-point "self-rating" item.) In the DMI surveys, 83% and 84% (in the telephone and personal interview surveys, respectively) disagree with the statement that "no private individual should be allowed to own a handgun." It is thus plain that a sizable majority of the U.S. population disapproves of the notion of an outright ban on the ownership of handguns; the size of the majority on this issue, however, does vary apparently depending on the specific wording of the question and the context in which it is asked.

(III) Weapons, Weapons Controls, and the Crime Rate

Both surveys have a sizable number of items probing people's opinions about what effects, if any, stricter weapons controls would have on the incidence of crime, particularly violent crime, in the country. Given the number of questions devoted to this topic, one must assume that both organizations feel something of importance turns on this issue, so one point must be established in advance: whether the public feels that stricter gun controls would reduce the crime rate and whether stricter gun controls actually would reduce the crime rate are entirely separate questions, and only the former is at issue here. (The latter is considered in Chapter Fifteen.)

Both surveys find immense majority support for the concept of mandatory and severe prison sentences for persons who use a gun to

commit a crime. The Caddell majority on the relevant item is 83% (CADDELL-11), the DMI majority is 93% in both administrations of a comparable item (DMI-19 and DMI-30). Caddell also finds a 55% majority favoring mandatory sentences for persons carrying handguns without a license, such as the Massachusetts Bartley-Fox law; DMI has no comparable item.

DMI asks, "If there were to be more firearms laws, would you expect the crime rate to decrease or increase?" One can only wish that the question would have said something about what kinds of laws, or about the "toughness" of the enforcement. Still, the plurality, in this case 43%, say they expect that this would cause the crime rate to decrease, most only by a "small" amount. Another large minority (41%) feels that this measure would leave the crime rate unaffected, and the remaining 16% think the crime rate would actually increase. Caddell's version of the item is an agree-disagree version with no neutral or middle category; he finds 49% agreeing that "requiring all handgun owners to be licensed would reduce crime," 42% disagreeing, and 10% with no opinion (CADDELL-21); a later item asking specifically about violent crime produces nearly identical results (CADDELL-24). Obviously, persons disagreeing with the Caddell item could believe either that this licensing provision would have no effect on crime or that it would actually cause crime to increase. One may also assume that most of the people who say they "don't know" to Caddell's item would, if pressed, respond "stay the same" to the DMI item. With these allowances for differences in question format and the response options provided, it is clear that the two surveys get very similar results; roughly 40% to 50% of the public think that crime would go down with stricter weapons controls, and the remainder think the crime

rate would either not be affected or might even increase.<sup>12</sup>

It should also be noted that the proportion saying they think the crime rate would go down under stricter gun controls is everywhere lower than the proportion who say they favor any measure involving licensing or registration of handguns. It must therefore follow that many people support such measures for reasons other than their assumed effects on the crime rate.<sup>13</sup>

Both surveys also find very large majorities who believe that criminals will always be able to get their hands on weapons, no matter what laws are passed. Caddell finds 78% agreeing that "gun control laws affect only law abiding citizens, criminals will always be able to find guns" (CADDELL-29); likewise, 85% of the phone respondents and 91% of the face-to-face respondents in the DMI surveys agreed that "registration of handguns will not prevent criminals from acquiring or using them for illegal purposes" (DMI-18 and DMI-28). In the same vein, 81% of DMI's phone respondents disagree that "assassination attempts on public officials could be avoided by banning private ownership of handguns" (DMI-29). (Caddell has no question on assassinations.)

Weapons control as a mechanism of crime control is the object of a long series of DMI questions which, for the sake of brevity, are not shown in Table 13-3. In this sequence, respondents were given a list of 17 measures that "have been proposed [to] fight crime" and asked to rate how effective they thought each measure would be. The measures asked about ranged from "increasing punishment for using a gun or other deadly weapon while committing a crime," which was seen as the most effective of the 17 options (86% thought this would be effective), down through

"outlawing private possession of all handguns," which was rated as least effective (27% thought this would be effective). The general theme that surfaces in this question sequence is that most "get tough" measures (mandatory sentences for gun crimes, "making criminals pay damages to their victims," "increasing punishment for serious crimes," and so on) are perceived as being more effective crime-fighting devices than are most measures involving stricter controls on gun ownership or use among the general population. This, of course, is consistent with the previous finding that fewer than half the population feels that stricter controls would have any effect on lowering the crime rate at all, and that most who do anticipate such an effect expect that it would only be "small." The one item from the DMI series that comes closest to an analogous Caddell item (CADDELL-21) asks about "requiring detailed record-keeping of guns purchases and sales by federally licensed gun dealers." Just over half (54%) felt this would be "very effective" (rated 6 or 7 on a seven-point scale); in the Caddell item, the comparable proportion is 49%.

In this same vein, DMI also has a question series asking respondents how many people they think would comply with various weapons control measures, if passed (DMI-10 to DMI-14). Again, how many people the public thinks would comply, and how many people actually would comply, are different questions. Still, the public anticipates a substantial degree of non-compliance, not only with new gun laws but also with laws outlawing smoking in public places or the sale and manufacture of hard liquor. On the item involving Federal registration of guns, for example, only 4% think that all gun owners would comply, 25% respond "most," and 28% say half; the remaining 43% think less than half of all gun owners

would comply with this measure. Anticipated compliance with measures more strict than Federal registration (DMI-13 and DMI-14) is even lower. Clearly, a question to gun owners about whether they, personally, would comply with each of these measures might have been more informative, but neither DMI or Caddell has such an item.<sup>14</sup>

#### (IV) Personal Protection and Safety

According to DMI, 83% of the electorate believes that "people who have guns in their home feel safer because of it" (DMI-20). At the same time, a majority (52% of the total, 57% of those with an opinion) rejects the argument that "requiring all handgun owners to be licensed would prevent law-abiding citizens from protecting themselves" (CADDELL-20). Most people, in short, do not think that licensing handgun ownership would deprive people of the security they derive from weapons ownership, so there is again no basic inconsistency in these results.

DMI has a seven item sequence (DMI-1 to DMI-7) asking people what kinds of crime they fear most. Murder in the course of another crime is apparently most feared, followed by burglary, robbery, and rape; murder by a friend or relative and various white collar crimes are apparently feared least. "How do these findings relate to the issue of gun control?" the DMI report asks. "First, note that the anti-gun argument of reducing 'murder by a friend or relative' is not a crime which many fear. Note [too] that robbery/mugging, rape, and, to some extent, 'murder in the course of another crime' are crimes which possession of guns by intended victims tends to discourage or prevent -- and these are crimes about which the public is very concerned... Finally, note that precisely those crimes most likely to be reduced by gun ownership are

those less feared by gun owners."

This is a creative, but possibly misleading, reading of the DMI results. Obviously, not many people would sit around in a high state of anxiety over the prospect of being murdered by a relative or close friend. That people do not fear this crime does not in any sense deny the well-known reality that most murders are in fact committed by relatives and friends, and, of course, neither the lack of fear nor the reality of this crime says anything about whether its incidence would be reduced by stricter gun controls. Also, that DMI's gun owners are less fearful of certain kinds of crimes than the non-owners cannot be interpreted in the absence of additional controls for region and city size, since weapons ownership is disproportionately a rural, small-town phenomenon, whereas the kinds of crimes being asked about in the sequence are disproportionately urban (see Chapter Seven). On the average, that is, gun owners may very well be less fearful of a mugging or a rape, as DMI reports, but that may only reflect that the average gun owner lives in a place where muggings and rapes are relatively rare.

(V) The Right to Keep and Bear Arms

89% of the respondents in DMI's personal survey, and 87% in the phone survey, believe that they "as a citizen have a right to own a gun." In the personal survey, 87% also said that the Constitution gives them that right. (See DMI-22, DMI-23, and DMI-31.) But at the same time, a substantial majority of Caddell's respondents (53% of the total, 60% of those with an opinion) disagree with the statement that "requiring all handgun owners to be licensed would violate people's constitutional

rights" (CADDELL-22). Thus, most Americans believe they have a right to own a gun, and most also believe that requiring a license for handgun ownership would not be a violation of that right. Again, there is no inconsistency: most people, it appears, understand that all rights and freedoms in a democratic society are subject to at least some constraints, the right to keep and bear arms apparently included.

(VI) "One Thing Leads to Another"

The more dramatic anti-control polemicists have in the past argued that registration or permit mechanisms for handgun ownership or use are "just the first step" towards, first, regulation of all guns, then confiscation of all guns, and then, once the population has been disarmed and lacks the means to resist, the decimation of all our freedoms. To emphasize a recurring theme, whether any of these things would actually come to pass, and whether the public thinks they would come to pass, are different questions; in either case, both polls contain a fair number of items addressing public thinking on such matters.

A plurality of Caddell's respondents (47% of the total, or 55% of those with an opinion) disagree with the statement that "requiring all handgun owners to be licensed is just the first step in confiscating all guns, including shotguns" (CADDELL-25). The comparable DMI item is somewhat different: in their personal survey, 51% agreed that "a national gun registration program might well eventually lead to the confiscation of all registered firearms by the government" (DMI-16). Obviously, the split in public thinking on this issue is so close to 50-50 that no certain statement about majority sentiment can be made; roughly half the population thinks such measures might lead to confiscation of all weapons,

and the other half does not. Reflecting the same ambivalence, 37% of Caddell's respondents think "it is possible to have effective controls on handguns without having controls on long guns," 40% think not, and the remainder are "not sure" (CADELL-19). On the other hand, DMI gets a fairly sizable majority (62%) agreeing that "prohibiting private possession of handguns will not lead to prohibiting all types of guns" (DMI-21).

On the "larger issues," Caddell finds a clear majority (53% of the total, 59% of those with an opinion) disagreeing that "requiring all handgun owners to be licensed is just another step by government to interfere in people's lives and limit their freedoms" (CADELL-23). DMI has no comparably direct item; the closest they come is their item DMI-26, which asks people how they feel about the "loss of privacy" that might result if persons' "credit ratings, income, gun ownership, or medical reports" information was "kept in government computers." Most people, some 71%, would be "concerned" about all this. The quadruple-barrelled nature of the question, however, renders it uninformative for our purposes, since we cannot tell from the item just what kinds of information-keeping people find objectionable.

The only remaining item that relates, even indirectly, to the topic at hand is Caddell's item #30: "The only way to control handguns is by Federal law; state laws which allow them to be purchased in some states but not others are ineffective." A large majority, 70%, agree with this statement, but since the question is double-barrelled, it is impossible to say just what the majority is agreeing to. One could, for example, readily agree with the second clause in the statement but disagree with the first, i.e., could believe that the "solution" to this problem is a set of state-level laws that are, nonetheless, uniform across states (and

again, the parallel to regulation of automobiles might be appropriate).

#### Conclusions: Weapons and Their Control

Despite the occasionally sharp differences in emphasis and interpretation between the DMI and Caddell reports, the actual empirical findings from these two surveys are remarkably similar; results from comparable (even roughly comparable) items rarely differ between the two surveys by more than 10 percentage points, well within "allowable" limits given the initial differences in sampling frame and the usual margin of survey error. The major difference between the two reports is not in the findings but in what is said about or concluded from the findings -- what aspects of the evidence are emphasized or de-emphasized, what interpretation is given to a finding, what implications are drawn from the findings about the need, or lack thereof, for stricter weapons controls. We thus conclude that the "anti-survey" hypothesis is not confirmed in this comparison; the two surveys differ in the aspects of public opinion they examine and in the conclusions they try to draw, but on virtually all points where a direct comparison is possible, the evidence from each survey says essentially the same thing.

What does the evidence say? First, large majorities favor any measure involving the registration or licensing of handguns, both for new purchases and for handguns presently owned.<sup>15</sup> The public would not favor such measures if their costs were astronomical; likewise, there is substantial agreement that such measures would only be effective if they were uniform across states. There is very little popular support for an outright ban on private ownership of handguns, although the majority would favor a ban on the manufacture and sale of Saturday Night Specials.

Large majorities believe they have a right to own guns and that the Constitution guarantees that right; most people also feel that a licensing requirement for handgun ownership would not be a violation of that right. No more than about half the population feels that stricter controls would decrease the crime rate; many measures other than stricter weapons controls are thought to be more effective to this end. Virtually everyone agrees that criminals will always be able to acquire guns, no matter what laws are passed; likewise, nearly everyone favors strict and mandatory sentences for persons using guns to commit crimes. Opinion is divided on the issue whether handgun controls will eventually lead to control (or even confiscation) of all weapons; this notwithstanding, the large majority favors such controls. There is little popular support for the idea that gun controls are somehow violations of Americans' basic freedoms.

So far as public opinion on such a complex issue can be summarized at all, the thrust of majority thinking on gun control seems to be that the government should be just as careful about who is allowed to own and use a firearm as it is about who is allowed to own and use automobiles or other potentially hazardous commodities. And just as licensing and registration of automobiles seem to have very little effect on reducing automobile accidents, so too do most people anticipate that stricter weapons controls would have little or no effect on crime. This, however, obviously does not prevent them from favoring at least some gun control measures. The underlying concept here seems to be that weapons, as automobiles, are intrinsicly dangerous objects that governments ought to keep track of for that reason alone. Whether doing so would reduce

the level of crime or violence in the society seems to be taken as a separate issue entirely.

FOOTNOTES

<sup>1</sup>The material in this chapter is an expanded version of James Wright, "Public Opinion and Gun Control: A Comparison of Results from Two Recent National Surveys," The Annals of the American Academy of Political and Social Science 455 (May, 1981): 24-39.

<sup>2</sup>Strictly speaking, the Center for the Study and Prevention of Handgun Violence is not a lobbying organization, but rather a research and educational enterprise founded by Milton Eisenhower. The principal executive officers of the Center, however, are all active in pro-control lobbying organizations; for example, the Center's director, Mr. Nelson Shields, is also President of Handgun Control, Inc. (We thank Mr. Shields for his helpful and gracious commentary on earlier drafts of the material in this chapter.)

<sup>3</sup>Indeed, the situation here is most fortunate. DMI and Cambridge Reports, Inc., are both reasonably well-known and respected private research and polling firms. DMI works primarily for "conservative" candidates and causes; Caddell, primarily for "liberals." Both organizations were in the field with their studies at about the same time; both studies are concerned with essentially the same subject matter. With the exceptions of their own organizational proclivities and those of the study sponsors, then, "all else is equal," or at least equal enough for the purposes at hand.

<sup>4</sup>Thus, both DMI's and Caddell's face-to-face surveys are said to be based on a final N of 1,500 respondents. Whether these are exact or only approximate N's cannot be determined from the reports themselves, so we treat them as if they were exact in this analysis.

<sup>5</sup>Unless otherwise noted in the text, we treat the two DMI surveys as a single survey throughout this chapter.

<sup>6</sup>Note that both surveys report sex ratios very close to 50-50, the correct population value. It is well-known that the correct sex ratio is very difficult to obtain with standard probability samples of households, because of the differential tendency of women to be present in the home at any particular moment. The reported sex ratios for the two surveys thus suggest either (i) that both organizations took extraordinary steps to execute a probability sample down to the individual level -- a time-consuming and expensive undertaking; or (ii) that both samples are probability samples down to the level of blocks or other enumeration areas and are quota samples (with sex defining the quotas) below the level of blocks. All things considered, the second of these is the more likely.

<sup>7</sup>This finding is reported in the Caddell survey and is also reported in the academic literature reviewed in Chapter Six. That opposition to the Gallup "police permit" item (see below) increases with income is reported in Wright and Marston (1975).

<sup>8</sup>It must, of course, be emphasized that neither of these sampling frames is "better" than the other; "all adults" is an appropriate sampling frame for the study of public opinion; so is "all registered voters."

<sup>9</sup>There are several useful reviews of the existing poll data on gun control opinions. Erskine (1972) is a compendium of virtually all relevant national results up through the early 1970's. See also Stinchcombe et al. (1980) and Schuman and Presser (1977-78) for more recent findings.

<sup>10</sup>The listings in Tables 13-2 and 13-3 are nearly, but not entirely, complete. Both Caddell and DMI have rather extensive amounts of open-ended materials that are presented and discussed in the reports but that are not included in the tables shown here. DMI also has a long series on the effectiveness of various measures, including gun control measures, in fighting crime; these items and results are discussed later in this chapter but they are not included in the DMI table.

<sup>11</sup>DMI's conclusion, while technically correct, is, of course, rather misleadingly stated. The actual result from their survey is that 41% say the present laws are about right, 44% say we need more gun laws, and 13% say there are already too many gun laws. Thus, none of the three response options generates a majority response; the modal or plurality response is that more laws are needed. DMI's conclusion is a rather transparent attempt to create precisely the opposite impression.

Given the split revealed in the question, it is useful to point out that all three of the following "conclusions" are technically

correct: (i) Majorities do not believe the present laws are about right. (ii) Majorities do not believe that there are already too many gun laws. (iii) Majorities do not believe that more gun laws are needed.

<sup>12</sup>It is uncertain what people have in mind when they say they think the crime rate would increase with stricter weapons controls. One possibility is that they believe private weaponry is a crime deterrent, and that the rate would thus increase as the deterrent was removed or restricted. Another possibility is that these people anticipate substantial noncompliance with stricter weapons controls, which would, by definition, increase the amount of "crime" being committed.

<sup>13</sup>It is anybody's guess what these "other reasons" might be. One possibility is that people feel that rates of accidental shootings would go down if tougher gun laws were enacted.

<sup>14</sup>The Illinois survey conducted by Bordua and Lizotte (1980) apparently did ask respondents whether they personally would comply with stricter weapons regulations. The general thrust of the findings was that non-owners said they would comply and owners said they would not (Alan Lizotte, personal communication).

<sup>15</sup>Neither survey deals with the registration or licensing of long guns in any direct way; the standard "police permit" item suggests that most people would favor this as well.

CHAPTER FOURTEEN  
REGULATING FIREARMS:  
AN OVERVIEW OF FEDERAL, STATE,  
AND LOCAL LEGISLATION

This chapter provides a brief overview of the history and provisions of extant weapons legislation in the United States, at Federal, state, and local levels. It is a summary of the materials contained in several, much more detailed, sources, which should be consulted for additional information on all points covered:

(i) The Bureau of Alcohol, Tobacco, and Firearms (ATF) publication, Your Guide to Firearms Regulations. This source is fairly detailed on the provisions of existing Federal regulations, and somewhat less detailed on state and local regulations. The information on state and local regulations is derived from an annual post-card survey of local political jurisdictions with populations in excess of 25,000, asking whether any new regulations have been enacted in the past year. Thus, there are no data in this source for jurisdictions smaller than 25,000, and the data for larger jurisdictions are also incomplete, since the response rate in the most recent mailing was just 57%.<sup>1</sup>

(ii) The National Rifle Association's Firearms and Laws Review (1975). This NRA publication contains brief and easy-to-understand summaries of applicable state regulations, and of some local ordinances, that are relevant to firearms users, especially hunters. This source is especially useful for regulations involving the use of shoulder weapons (as opposed to handguns).

(iii) There are three recent scholarly analyses of extant firearms regulations: Jones and Ray (1980), and Cook (1979a, 1980). We have drawn liberally on the summaries provided in these sources, especially the first. Zimring's (1975) paper on the Gun Control Act of 1968 (GCA) is definitive on the history of Federal legislative efforts and on the GCA intent, and we have drawn heavily on this source as well.

(iv) Finally, we present here some selected materials from a survey done recently by us of weapons policies in a sample of U.S. police departments. The full report of this survey is contained in a separate publication (Weber-Burdin et al., 1981).

The purpose of this chapter is descriptive, not evaluative. The discussion deals with the kinds of laws that have been passed and, to some extent, with their intended (or hoped-for) effects. The more specifically evaluative question -- whether the laws achieved the intended, or any other, effects -- is taken up in the following chapter.

In their moments of polemical excess, advocates of stricter weapons regulations sometimes assert that the United States is virtually the only advanced civilized nation in the world that exercises no rational controls over the civilian ownership, possession, or use of firearms. In fact, there are something on the order of 20,000 firearms laws of one or another sort already on the books. These laws have been enacted at different times and places, for different reasons, invoke different "control" mechanisms, and have different intended effects. The problem, if indeed there is one, is clearly not that civilian ownership and use of firearms are unregulated, but that the extant regulations encompass

a vast congeries of disparate Federal, state, and local laws, many of them working at direct cross-purposes with others. In the same vein, jurisdictions with rather restrictive regulations often abut jurisdictions with barely any controls at all. Proposals for a more uniform set of state laws, or a single overarching Federal law, date to at least the 1920's, but movement in this direction has been limited or non-existent, owing in large part to the Federal government's limited Constitutional powers to regulate civilian arms.<sup>2</sup>

That criminal violence has, over the past two decades, risen dramatically in spite of the large numbers of gun laws on the books is taken in some circles (namely, the anti-control circles) as evidence that gun laws "just don't work," and in other circles (namely, the pro-control circles) as evidence either that the wrong laws have been passed, or that enforcement has been indifferent or otherwise inadequate, or that the disparity in restrictions across jurisdictions means that no jurisdiction-specific law is going to reduce the availability of firearms for criminal purposes by very much. We have little to say about this debate in the present chapter. As noted, our purpose here is merely to summarize the laws now on the books. In the following chapter, however, we do note that very few of the laws that have been passed seem to have had dramatic, or even noticeable, effects on criminal violence.

#### Federal Legislation

History. The GCA of 1968 was the first comprehensive piece of Federal legislation dealing specifically with firearms. Prior to that

Act, Federal involvement and purview in regulating firearms was limited and subject to little enforcement.<sup>3</sup>

During the late 19th century and into the first decade of the 20th, there were isolated state and local attempts to control firearms, but no federal efforts of importance. The first significant Federal involvement was a 10% manufacturers' excise tax on firearms that was part of the larger War Revenue Act of 1919. Although the tax was imposed largely for fiscal purposes, there are indications that it also reflected some concern with handguns as a public safety problem. The tax survived its emergency revenue-sharing intent and still remains a part of Federal firearms policy. An important legacy of the Federal firearms excise tax is that the Federal agency empowered to collect the tax -- the Department of Treasury, and within the Treasury, the Bureau of Internal Revenue -- had administrative control over the enforcement of Federal firearms regulations. Not until 1972 was the Alcohol, Tobacco, and Firearms Division of the IRS constituted as a separate Bureau within the Department of Treasury (Zimring, 1975: 157).

In 1927, with urban crime and gun use receiving increasing public attention, debate was sparked on the Federal role in firearms regulations. In that year, Congress enacted a law prohibiting the mailing of concealable firearms to private individuals, which was an attempt by Congress to support existing local and state legislation by stemming the flow of handguns into states with stricter controls. The law had limited impact since it was still legal to deliver firearms by private express companies. Throughout the 1920s, there was discussion about uniform state laws regulating possession and use of handguns, but no significant

legislation was passed.

In the early 1930's, the New Deal war on crime resulted in two important pieces of legislation: the National Firearms Act of 1934 and the Federal Firearms Act of 1938. Both were precursors of the GCA of 1968.

The National Firearms Act (NFA) of 1934 curtailed civilian ownership of machine guns, sawed-off shotguns, silencers, and other forms of "gangster type" weapons. Its regulatory efforts involved the imposition of a \$200 tax per weapon transfer for these types of weapons, and provided for their registration with the Federal government. An NFA permit is still required to legally possess such a weapon.

The Federal Firearms Act (FFA) of 1938 was the most significant attempt prior to the 1960's to impose Federal controls on the commerce and possession of firearms. The Act called for Federal licensing of all manufacturers, importers, and dealers involved in the shipping and receipt of guns in interstate commerce. Certain classes of individuals (some felons, fugitives from justice, persons under indictment, or those ineligible under state laws) were prohibited from obtaining licenses or purchasing guns. In addition, dealers were required to keep records of firearms transactions. The law, however, did not require dealers to actually verify the eligibility of customers, and the small cost of manufacturer's and dealer's licenses (\$25 and \$1, respectively) created a proliferation of firearms dealers (over 100,000 by the mid-sixties) (Zimring, 1975: 141), such that effectively monitoring dealer compliance with the FFA was impossible. The law also did not prohibit sales to individuals crossing state lines to buy firearms in less

restrictive states. For these reasons, as Zimring (1975: 143) notes, the FFA was mainly "a symbolic denunciation of firearms in the hands of criminals, coupled with an inexpensive and ineffective regulatory scheme that did not inconvenience the American firearms industry or its customers" (Zimring, 1975: 143).

From 1939 to 1957, there was very little Federal or state legislative activity in this area. In 1958, new Federal regulations were adopted which extended the dealer record keeping period from 6 to 10 years following a firearm sales transaction, and which required manufacturer's serial numbers on all firearms except .22 caliber rifles.

#### Present Legislation

Owing to a number of reasons, among them the outbreaks of racial unrest, the ever-increasing crime rate, and the sharply increased flow of foreign weapons into the domestic market, several new legislative proposals were introduced to the Congress in the period from 1963 to 1967. Most of these died in committee, and no new legislation was enacted. Many of these proposals, however, were encapsulated, and eventually passed, in the Gun Control Act of 1968, a bitterly-contested piece of Federal legislation.

Although the legislative intent of GCA is somewhat ambiguous, the major goals appear to have been:

- (1) To eliminate the interstate traffic in firearms, especially between less restrictive and more restrictive states.
- (2) To define certain classes of individuals as ineligible for legally purchasing firearms.

(3) To end the importation of all surplus military firearms and all other guns unless they were "particularly suitable for ... sporting purposes" (Zimring, 1975: 149).

The central element of this legislation was to ban interstate shipments to or from persons who did not possess Federal licenses as dealers, manufacturers, importers, or collectors, and to make it illegal for any person except a licensee to engage in any firearms dealings, interstate or not. Dealers were to be more strenuously regulated, specifically, they were now obliged to obtain identification from a customer to verify state residency and age requirements, and to maintain records of firearms sales for periodic Federal inspection. Prohibitions against the receipt of firearms by certain classes of individuals was broadened to include (1) minors (under 18 for shotguns and rifles; under 21 for handguns); (2) convicted felons, fugitives from justice, and defendants under indictment; (3) adjudicated mental defectives or persons having been in mental institutions; (4) persons who were drug abusers; (5) those with dishonorable discharges from the Armed Forces; and (6) illegal aliens.

Concerning the importation of firearms, the GCA prohibited the importation of guns not "suitable for sporting purposes," an obvious effort to reduce the availability of the low-priced "Saturday Night Special." The IRS interpreted "sporting purposes" into a scoring system (termed "factoring criteria") which excluded very small handguns and those without safety devices, and which created standards of frame construction and handgun weight to qualify for import. Although these standards did reduce handgun imports, they did not stop domestic manufacturers from producing similar guns (see Chapter Three). Indeed,

because the GCA did not prohibit the import of certain firearms parts, the result of the "sporting purposes" standard may have been to shift the assembly of such guns from Europe to the U.S. (Cook, 1979a).

Since enactment, several of the GCA provisions have proven difficult to enforce. The key issues appear to be the very large number of licensed dealers (who, because of their numbers, cannot be effectively monitored for compliance), the apparently sizeable fraction of handgun transfers that take place between private individuals (which, for obvious reasons, are virtually impossible to monitor), and the limited enforcement budget given by Congress to ATF. For these and other reasons, several new Federal legislative efforts have been introduced to the Congress in the past ten years, but none have been enacted. The 1968 GCA therefore remains the primary source of extant Federal firearms regulation.

#### State and Local Regulations

State regulations of firearms focus more commonly on handguns than long guns, concentrating on the control of handgun acquisition, transfer, and possession, and providing for the place and manner of legally carrying. Table 14-1 lists the types of handgun restrictions extant in each state and the District of Columbia (as of 1978); in Table 14-2, state long gun restrictions are presented. (Both tables are adapted from Jones and Ray, 1980.) Here, we review briefly each of the major categories of regulatory activity at the state level: (1) dealer controls, (2) acquisition and transfer controls, (3) possession controls, (4) provisions for place and manner of carrying, (5) penalties for use of handguns in crime, and (6) bans on certain handguns.

Some states have no further regulations on handguns beyond those contained in the GCA. However, cities in these states sometimes enact more stringent regulations. Many states delegate gun control legislation to municipalities, while other states specifically prohibit local legislatures from enacting handgun controls. State preemption may be "partial" or "complete." California, Georgia, and Michigan, for example, partially preempt the field of handgun control. "Partial" preemption may mean that (a) certain components of handguns control are not preempted; or (b) non-preempted components of handgun control are allowed to be more stringent at the local level. The state of California, for example, preempts registration and licensing of commercially manufactured firearms, but allows local ordinances concerning licensing of firearms dealers and conditions under which concealable firearms may be carried. Maryland is an example of a state that completely preempts regulations of handguns; no city in Maryland has ordinances other than those already contained in state law. An overview of local regulations in 30 American cities is shown in Table 14-3, also adapted from Jones and Ray.

Dealer Controls

(a) Licensing: Twenty-five states and the District of Columbia require that firearms dealers be licensed. Investigation procedures for state dealer licenses are usually more extensive than those for federal licenses. The annual fees for dealer licenses range from \$5 (Washington) to \$100 (South Carolina). Some states, e.g., Virginia and New Jersey, require that employees of handgun dealers also be licensed by the state, subject to the same licensing criteria (and fees) as dealers.

TABLE 14-1\*

STATE HANDGUN CONTROLS	DEALER REQUIREMENTS			ACQUISITION AND PURCHASE REQUIREMENTS				POSSESSION REQUIREMENTS			
	dealer license	handgun sales record	sales report to police	special id card	permit-to-purchase	application-to-purchase	registration	police review	certificate of registration	special id card	permit for home/business
Alabama	x	x	x								
Alaska											
Arizona											
Arkansas											
California	x	x	x <sup>a</sup>			x		x			
Colorado		x									
Connecticut	x	x	x			x		x			
Delaware	x	x									
D. of C.	x	x				x <sup>f</sup>	x <sup>f</sup>	x	x		
Florida											
Georgia	x										
Hawaii	x				x		x	x	x		
Idaho											
Illinois		x		x				x		x	
Indiana											
Iowa	x	x	x		x			x			
Kansas											
Kentucky											
Louisiana											
Maine		x									
Maryland	x	x	x			x		x			
Massachusetts	x	x	x <sup>a</sup>	x	x			x		x	
Michigan		x	x		x		x <sup>g</sup>	x	x		
Minnesota		x	x		x <sup>c</sup>	x <sup>c</sup>		x			
Mississippi		x	x				x				
Missouri		x			x			x			
Montana											
Nebraska											
Nevada											
New Hampshire	x	x	x								
New Jersey	x	x	x		x			x			
New Mexico											
New York	x	x			x <sup>d</sup>		x	x			x
North Carolina	x	x			x			x			
North Dakota	x	x	x <sup>a</sup>		x <sup>e</sup>			x			
Ohio											
Oklahoma											
Oregon	x	x	x			x		x			
Pennsylvania	x	x	x			x		x			
Rhode Island	x	x				x		x			
South Carolina	x	x	x					x			
South Dakota	x	x	x			x		x			
Tennessee	x					x		x			
Texas	x	x									
Utah		x	x								
Vermont		x									
Virginia	x <sup>b</sup>	x			x <sup>b</sup>						
Washington	x	x	x			x		x			
West Virginia	x	x	x								
Wisconsin											
Wyoming		x									

(a) Includes private transactions  
 (b) Only in counties where population density exceeds 1,000 per square mile  
 (c) Combines permit-to-purchase with application-to-purchase (see text)  
 (d) Prerequisite for permit-to-purchase is a license to possess or carry  
 (e) Part of license-to-carry stipulation  
 (f) Only authorized purchasers are law enforcement and certain military agencies; 1977 law stipulates that only those handguns registered under 1968 law may be re-registered and only to the same owner. This law effectively prohibits all further purchases and transfers of handguns.  
 (g) Indirectly accomplished through mandatory safety inspections by police in order to legally possess handguns

\* Table adapted from Jones and Ray (1980)

TABLE 14-1\* (cont.)

STATE HANDGUN CONTROLS	CARRYING REQUIREMENTS					MOTOR VEHICLE REQUIREMENTS			
	openly & con. prohibited	openly & con. license req.	concealed prohibited	concealed license req.	license req.	unloaded	securely encased	not easily accessible	not concealed
Alabama			x	x	x				
Alaska		x							
Arizona		x							
Arkansas	x <sup>a</sup>								
California			x	x	x				x
Colorado			x						
Connecticut	x			x		x			
Delaware			x						
D. of C.			x	x	x	x	x	x	x
Florida			x			x	x	x	
Georgia	x	x <sup>b</sup>	x <sup>e</sup>			x	x	x	
Hawaii		x <sup>c</sup>				x	x	x	
Idaho			x						
Illinois		x <sup>d</sup>	x			x	x	x	x
Indiana				x	x	x			
Iowa			x	x	x	x			x
Kansas			x						
Kentucky			x						
Louisiana			x						
Maine			x						
Maryland			x			x			
Massachusetts	x			x					
Michigan			x	x	x	x	x	x	
Minnesota	x			x	x	x	x	x	
Mississippi			x <sup>e</sup>	x <sup>e</sup>					
Missouri			x	x					
Montana									
Nebraska			x	x					
Nevada									
New Hampshire			x <sup>e</sup>	x <sup>e</sup>	x	x			
New Jersey	x			x	x	x	x	x	
New Mexico									
New York				x <sup>f</sup>	x				
North Carolina			x						
North Dakota	x			x	x	x			
Ohio			x			x	x	x	x
Oklahoma	x					x			x
Oregon				x	x				
Pennsylvania				x	x	x			
Rhode Island	x				x	x	x		x
South Carolina	x					x	x		
South Dakota				x	x				
Tennessee	x <sup>a</sup>								
Texas	x								
Utah				x		x <sup>g</sup>			
Vermont	x <sup>a</sup>								
Virginia				x					
Washington				x		x	x		
West Virginia	x					x			
Wisconsin			x						
Wyoming				x					

- (a) With intent to use as a weapon, to go armed, or to injure
  - (b) Openly only
  - (c) Two licenses are issued: carrying openly only and concealed only
  - (d) Two licenses are issued: "qualified" (for certain purposes) and "unlimited"
  - (e) Except for classes of individuals exempted
  - (f) An additional permit is required to carry in New York City
  - (g) Applies to non-resident travellers only
- In Arkansas, it is illegal to carry a handgun in a m/v with intent to use as a weapon

\* Table adapted from Jones and Ray (1980)

TABLE 14-1\*\*\* (cont.)

STATE HANDGUN CONTROLS	EXEMPTIONS FROM CARRYING RESTRICTIONS										
	law enforce. officers	military	personal	shooting club members**	licensed for game hunting**	armed guards	occupation: protection	private investigator	transporting firearms	protection from imm. threat	certified non-residents in compliance w/ m/v reg.
Alabama	P	P	P								
Alaska	P										
Arizona	P										
Arkansas	P	P			P						
California	PR	PR	PR	PR	PR		R		R		
Colorado											
Connecticut	P	P							P*		P
Delaware											
D. of C.	LP	P								P*	
Florida	P	P	P	P	P					P*	P
Georgia	P	P									
Hawaii	P	P			P					P*	P
Idaho	P										
Illinois	PR	PR	PR	PR	PR		PR				
Indiana	P	P	P		P					P*	P
Iowa	L		P*	P*	L						P
Kansas	P	P		P	P		P				
Kentucky	P				P						
Louisiana	P										
Maine	P						P				
Maryland	PR	PR			PR		PR				
Massachusetts	P										P
Michigan	PR	PR			L				P*		P
Minnesota	PR			P					P		
Mississippi	P	P	P	P	L				P	P	
Missouri	P										P
Montana	P	P									
Nebraska	P	P			P	P	P				P
Nevada	L	P									
New Hampshire	P	P	L	L							
New Jersey	P	P	P*	P*	L				P*		P
New Mexico											
New York	LPR				LPR						
North Carolina	P	P									
North Dakota	P	P							P*		P
Ohio	PR	PR				PR	PR	PR		PR	
Oklahoma	PR	PR	P*	P*	PR				P*		P
Oregon	PR	PR	PR	PR							
Pennsylvania	PR	PR	PR	PR	PR				P*		P
Rhode Island	LPR	PR	P*		L				P*		P
South Carolina	LP	P	P	P	L	L	L		P*		P
South Dakota	P										
Tennessee	P	P									
Texas	P	P	P	P	P		P			P	
Utah	PR									P*	P
Vermont											
Virginia	P										
Washington	PR	PR	PR	PR		L			P*	L	P
West Virginia	L	P	P*	P	L				P*		P
Wisconsin	P										
Wyoming	P			P	L	L	L				

- KEY:** L = specifically eligible for license to carry  
P = exempt from carrying prohibition  
R = exempt from "carrying in motor vehicle" restriction  
\* = exemption applies if "carrying in motor vehicle" restrictions are obeyed

\*\* While engaged in sport

\*\*\* Table from Jones and Ray (1980)

TABLE 14-1\* (cont.)

STATE HANDGUN CONTROLS	INELIGIBLE CLASSES									
	Persons under age minimum	age to possess	drug abusers	alcohol abusers	mental patients	Juvenile delinquents	all felons	violent felons	all misde-	meanants
Alabama			P	PT				P		P
Alaska								P		P
Arizona										
Arkansas								P		P
California	18		P					P		PC
Colorado										
Connecticut								C		
Delaware			P		P			P		P
D. of C.	21:PC	21	PC	BPTC	PC			C		P
Florida	21:C							P		
Georgia	21:C				C			C		C
Hawaii			PC		C			P		C
Idaho										
Illinois	18		P		P	BPT		P		
Indiana				T						C
Iowa								P		
Kansas			P	PT						
Kentucky								P		
Louisiana										PC
Maine								P		
Maryland	18:B		P	BPT						P
Massachusetts	18:PC	18	PC	BPT	P			PC		
Michigan	21:C	18			C			C		
Minnesota	21:C	18	PC	PC	PC					PC
Mississippi		16								PC
Missouri		M								
Montana										
Nebraska		18						P		
Nevada		14						P		
New Hampshire										
New Jersey	18:BP	18	PC	BC	PC			C	P	BC
New Mexico										
New York	21:P	21			PC			PC		
North Carolina								PC		
North Dakota		17	P	P	P					P
Ohio			PC	BFTC	PC					BPTC
Oklahoma								P		
Oregon		18						P		
Pennsylvania	18:B			T						P
Rhode Island	21:C	15	PC	BPTC	PC					P
South Carolina	21:P	21	P	BPT	P					P
South Dakota										
Tennessee				BT						C
Texas										P
Utah		18	P		P					P
Vermont		16								
Virginia										
Washington		14	C	BTC	C					PC
West Virginia			C	C				C		
Wisconsin		M								
Wyoming										
UNITED STATES (GCA)	21:T		BT		BPT			BPT		

Key: B = ineligible to buy or receive  
 P = ineligible to possess  
 T = ineligible to sell or transfer to  
 C = ineligible to carry  
 M = minor (age not defined)

Note: For transfer (T) and receipt (B), only those state laws with more stringent requirements than the GCA are shown. For possession (P), all state-defined ineligibles are shown.

\* Table from Jones and Ray (1980)

TABLE 14-1\* (cont.)

STATE HANDGUN CONTROLS	INELIGIBLE CLASSES																
	violent mis-	demeanants	fugitives from	justice	members of	subvers. orgs.	aliens	under influence	of drugs	under influence	of alcohol	in "asilated"	state of mind	non-compliance	purchase regis-	out-of-state	residents
Alabama	PT																
Alaska	P																
Arizona	P							P		P							
Arkansas																	
California																	
Colorado										P		P					T
Connecticut										TC							
Delaware	P																
D. of C.	BPT	C										T					
Florida																	T
Georgia	C																
Hawaii	PC	PC															
Idaho																	
Illinois												PC					
Indiana	TC																T
Iowa												T					
Kansas																	
Kentucky																	
Louisiana																	
Maine												P					
Maryland	BPT	P										T		T			T
Massachusetts												BPTC					
Michigan												BC		P		P	
Minnesota	PC																
Mississippi																	T
Missouri																	T
Montana																	
Nebraska																	
Nevada																	
New Hampshire																	
New Jersey	BP	PC															T
New Mexico																	
New York	BPC																T
North Carolina																	
North Dakota	P																T
Ohio												PC					T
Oklahoma																	
Oregon																	
Pennsylvania	P																
Rhode Island	PT	P															
South Carolina	BPT	P															T
South Dakota	PT																
Tennessee	BT																T
Texas																	
Utah																	
Vermont	P																
Virginia																	
Washington																	
West Virginia	BPTC																
Wisconsin																	T
Wyoming																	P
UNITED STATES (GCA)																	

Key: B = ineligible to buy or receive  
 P = ineligible to possess  
 T = ineligible to sell or transfer to  
 C = ineligible to carry

Note: For transfer (T) and receipt (B), only those state laws with more stringent requirements than the GCA are shown. For possession (P), all state-defined ineligibles are shown.

\* Table from Jones and Ray (1980)

TABLE 14-2\*  
STATE LONGGUN CONTROLS

	DEALER/ACQUISITION OR PURCHASE CONTROLS			
	dealer licensed	permit/license to purchase	application-to-purchase	registration special id card
Alabama				
Alaska				
Arizona				
Arkansas				
California				
Colorado				
Connecticut				
Delaware				
D. of C.		x	x	
Florida				
Georgia				
Hawaii	x			x
Idaho				
Illinois			x	x
Indiana				
Iowa				
Kansas				
Kentucky				
Louisiana	x			x <sup>d</sup>
Maine				
Maryland				x <sup>d</sup>
Massachusetts	x			
Michigan				
Minnesota				
Mississippi				
Missouri				
Montana				
Nebraska				
Nevada				
New Hampshire				
New Jersey	x			x
New Mexico				
New York	x			
North Carolina				
North Dakota				
Ohio				
Oklahoma				
Oregon				
Pennsylvania	x			
Rhode Island	x			
South Carolina				
South Dakota				
Tennessee	x			
Texas				
Utah				
Vermont				
Virginia				
Washington				
West Virginia			x <sup>c</sup>	
Wisconsin				
Wyoming				

- (a) If rifle barrel length is less than 16" or shotgun less than 20"
- (b) Not required if person has a license-to-carry a handgun
- (c) Applies to "high powered rifles"

City exceptions indicated in NRA's Firearms and Law Review: Chicago (registration of all firearms), New York City (permit-to-purchase), and Philadelphia (license-to-purchase).

\*Table adapted from Cook (1979a) for dealer licensing and from the NRA's Firearms and Law Review (1975) for remaining categories.

TABLE 14-3\*

SELECTED STATE AND LOCAL JURISDICTIONS HANDGUN CONTROLS	DEALER REQUIREMENTS			ACQUISITION AND PURCHASE REQUIREMENTS				POSSESSION REQUIREMENTS			
	dealer license	handgun sales record	sales report to police	special id card	permit-to-purchase	application-to-purchase	registration	Police review	certificate of registration	special id card	permit for home/business
CALIFORNIA	x	x	x		x		x				
Los Angeles	+	+	+								
Oakland	+	+	+								
San Diego	+	+	+								
San Francisco	+	+	+								
COLORADO		x									
Denver		+	x <sup>a</sup>								
D. of C.	x	x		x			x	x	x		
FLORIDA											
Dade County	x	x	x	x <sup>b</sup>				x			
Miami	x	x	x								
GEORGIA	x										
Atlanta	+	x									
ILLINOIS		x	x					x		x	
Chicago	x	+	x	+			x <sup>c</sup>	+	x	+	
KENTUCKY											
Louisville	x	x	x <sup>a</sup>		x			x			
LOUISIANA											
New Orleans		x	x		x			x			
MARYLAND	x	x	x		x			x			
Baltimore	+	+	+		+						
MASSACHUSETTS	x	x	x <sup>a</sup>	x	x			x		x	
Boston	+	+	+	+	+			+		+	
MICHIGAN		x	x	x	x		x <sup>a</sup>	x	x <sup>d</sup>		
Detroit		+	+	+	+		+	+	+		
MINNESOTA		x	x	x	x			x			
Minneapolis		x	x <sup>a</sup>	+	x			x			
MISSOURI		x			x			x			
Kansas City		+			+						
St. Louis		+			+						
NEW JERSEY	x	x	x		x			x			
Newark	+	+	+		+						
NEW YORK	x	x	x		x		x	x		x	
Buffalo	+	+			+		+	+		+	
New York City	x	+			+		+	+		+	
NORTH CAROLINA	x	x			x			x			
Charlotte	x	+			+						
OHIO											
Cincinnati	x	x	x								
Cleveland	x	x	x	x			x		x	x	
OREGON	x	x	x		x			x			
Portland	+	+	+		+			+			
PENNSYLVANIA	x	x	x		x			x			
Philadelphia	x	+	+		+			+			
Pittsburgh	+	+	+		+			+			
TEXAS	x	x									
Dallas	x	+									
Houston	x	+									
WASHINGTON	x	x	x		x			x			
Seattle	+	+	+		+			+			
WISCONSIN											
Milwaukee	x	x	x	x							

KEY: X = requirement originates in listed jurisdiction  
+ = local administration of a state statute

- (a) Includes private transfers
- (b) Purchasers must demonstrate knowledge of firearms laws and handgun safety
- (c) Because Chicago has stringent handgun regulations and high dealer license fees, Chicago dealers do not offer handguns for sale. Chicago residents who purchase handguns outside the city's limits must register their handguns within ten days of bringing their handguns to Chicago.
- (d) Registration is indirectly accomplished through mandatory safety inspections by police in order to legally possess handguns; safety inspection certificate must be kept with handgun at all times.
- (e) A special New York City permit to carry or possess is a prerequisite for a permit-to-purchase.

\* Adapted from Jones and Ray (1980)

TABLE 14-3\* (cont.)

SELECTED STATE AND LOCAL JURISDICTIONS HANDGUN CONTROLS	CARRYING REQUIREMENTS				MOTOR VEHICLE REQUIREMENTS			
	openly & con. prohibited	openly & con. license req.	concealed prohibited	concealed license req.	unloaded	securely engaged	not easily accessible	not concealed
CALIFORNIA			X	X	X			X
Los Angeles								+
Oakland								+
San Diego								+
San Francisco								+
COLORADO			X					
Denver	X				X			
D. OF C.			X	X	X	X	X	X
FLORIDA			X		X	X		
Dade County								+
Miami								+
GEORGIA	X	X <sup>a</sup>	X		X			
Atlanta	+	+						
ILLINOIS			X			X		X
Chicago	X					+	X	+
KENTUCKY			X					
Louisville								
LOUISIANA			X					
New Orleans								
MARYLAND		X			X			
Baltimore								+
MASSACHUSETTS		X			X			
Boston								+
MICHIGAN			X		X	X	X	X
Detroit								+
MINNESOTA		X			X	X	X	X
Minneapolis								+
MISSOURI			X					
Kansas City						X		
St. Louis						X	X	
NEW JERSEY		X			X	X	X	X
Newark								+
NEW YORK			X		X			
Buffalo								+
New York City								<sup>b</sup> +
NORTH CAROLINA			X					
Charlotte								
OHIO			X			X	X	X
Cincinnati								+
Cleveland								+
OREGON			X		X			
Portland						X		
PENNSYLVANIA			X		X	X	X	
Philadelphia								+
Pittsburgh		X						+
TEXAS		X			X			
Dallas								+
Houston								+
WASHINGTON			X		X	X		
Seattle								+
WISCONSIN			X					
Milwaukee								+

KEY: X = requirement originates in listed jurisdiction  
+ = local administration of a state statute

- (a) In Georgia carrying a handgun concealed is prohibited except for classes specifically exempted. Carrying a handgun openly is permitted with the appropriate license.
- (b) A special New York City permit-to-carry a handgun is required.

\*Adapted from Jones and Ray (1980)

TABLE 14-3\*\*\* (cont.)

SELECTED STATE AND LOCAL JURISDICTIONS HANDGUN CONTROLS	EXEMPTIONS FROM CARRYING RESTRICTIONS									
	law enforcement officers	military personnel	shooting club members**	licensed for game hunting*	armed guards	occupation: protecting s	private investigators	transporting firearm	protection from imm. threat	certain non-residents in compliance w/ m/v regs.
CALIFORNIA	PR	PR	PR	PR	PR			R		R
Los Angeles										
Oakland										
San Diego										
San Francisco										
COLORADO										
Denver	P	P	P*						P*	P*
D. OF C.	LP	P								
FLORIDA	P	P	P	P	P				P*	P
Dade County										
Miami										
GEORGIA	P	P								
Atlanta										
ILLINOIS	PR	PR	PR	PR	PR			PR		
Chicago	P	P	P	P	P			P	P*	
KENTUCKY	P				P					
Louisville										
LOUISIANA	P									
New Orleans										
MARYLAND	PR	PR			PR			PR		
Baltimore										
MASSACHUSETTS	P									P
Boston										
MICHIGAN	PR	PR			L				P*	P
Detroit										
MINNESOTA	PR				P					P
Minneapolis										
MISSOURI	P									P
Kansas City					P					
St. Louis					P*	P*	P	P		P
NEW JERSEY	P	P	P*	P*	L				P*	P
Newark										
NEW YORK	LPR				LPR					
Buffalo										
New York City										
NORTH CAROLINA	P	P								
Charlotte										
OHIO	PR	PR			PR	PR	PR			PR
Cincinnati										
Cleveland										
OREGON	PR	PR	PR	PR						
Portland										
PENNSYLVANIA	PR	PR	PR	PR	PR				P*	P
Philadelphia					P					
Pittsburgh	R	R	R	R	R			R		
TEXAS	P	P	P	P	P			P		
Dallas										
Houston										
WASHINGTON	PR	PR	PR	PR		L		P*	L	P
Seattle										
WISCONSIN										
Milwaukee										

KEY: L = specifically eligible for license to carry  
P = exempt from carrying prohibition  
R = exempt from "carrying in motor vehicle" restriction  
\* = exemption applies if "carrying in motor vehicle" restrictions are obeyed

Note: State jurisdiction exemptions also apply to local levels, but are not duplicated here. Local exemptions apply only to carrying restrictions required by local ordinance.

\*\* While engaged in sport

\*\*\*Table from Jones and Ray (1980)

TABLE 14-3\* (cont.)

SELECTED STATE AND LOCAL JURISDICTIONS HANDGUN CONTROLS

	INELIGIBLE CLASSES									
	persons under age	minimum age to possess	drug abusers	alcohol abusers	mental patients	Juvenile delinquents	all felons	violent felons	violent misdemeanants	
CALIFORNIA	18	P								
Los Angeles										
Oakland										
San Diego										
San Francisco										PC
COLORADO										
Denver										
D. OF C.	21:PC	21	PC	BPTC	PC		C	P		
FLORIDA	21:C							P		
Dade County										
Miami							C	C		
GEORGIA	21:C									
Atlanta							P	BPT	P	
ILLINOIS	21:B	18	P							
Chicago										P
KENTUCKY	21:BP	21		T	P					PC
Louisville										
LOUISIANA										P
New Orleans										
MARYLAND	18:B		P	BPT						P
Baltimore										
MASSACHUSETTS	18:PC	18	PC	BPT	P		PC			
Boston										
MICHIGAN	21:C	18		C			C			
Detroit										
MINNESOTA	21:C	18	PC	PC	PC					PC
Minneapolis										
MISSOURI										
Kansas City										
St. Louis	17:P	17								
NEW JERSEY	18:BP	18	PC	BC	PC		C	P	BC	
Newark										
NEW YORK	21:P	21			PC		PC			
Buffalo										
New York City										
NORTH CAROLINA										PC
Charlotte										
OHIO			PC	BPTC	PC					BPTC
Cincinnati		16								
Cleveland	21:PC	21					PC			BPTC
OREGON		18								P
Portland										
PENNSYLVANIA	18:B			T						P
Philadelphia				B						BT
Pittsburgh										
TEXAS										P
Dallas										
Houston										
WASHINGTON		14	C	BTC	C					PC
Seattle										
WISCONSIN		M								
Milwaukee	18:B									
UNITED STATES (GCA)	21:T		BT		BPT		BPT			

KEY: B = ineligible to buy or receive C = ineligible to carry  
 P = ineligible to possess M = minor (age not defined)  
 T = ineligible to sell or transfer to

Note: For transfer (T) and receipt (B), only those state or local laws with more stringent requirements than the GCA are shown. For possession (P), all state- and/or local-defined ineligibles are shown. Local ineligibility definitions which are identical to or less stringent than those defined by state law are excluded.

\*Table from Jones and Ray (1980)

TABLE 14-3\* (cont.)

SELECTED STATE AND LOCAL JURISDICTIONS HANDGUN CONTROLS

	INELIGIBLE CLASSES									
	violent mis- demeanants	fugitives from justice	members of subversive orgs.	aliens	under influ- ence of drugs	under influ- ence of alcohol	in "agitated" state of mind	non-compliance purchase regs.	out-of-state residents	
CALIFORNIA										
Los Angeles										
Oakland										
San Diego										
San Francisco										
COLORADO					P	P				
Denver					T	T	T			
D. OF C.	BPT	C								T
FLORIDA										
Dade County				T		PT	PT	T		
Miami				T		PT	PT			
GEORGIA					C					
Atlanta										
ILLINOIS										T
Chicago										T
KENTUCKY										
Louisville	PT	P								T
LOUISIANA					P					
New Orleans										T
MARYLAND	BPT	P					T	T	T	
Baltimore										
MASSACHUSETTS						BPTC				T
Boston										
MICHIGAN							BC	PC	PC	
Detroit										
MINNESOTA					PC			PTC	PTC	
Minneapolis										
MISSOURI										T
Kansas City										
St. Louis										
NEW JERSEY					BP	PC				T
Newark										
NEW YORK					BPC			BPC		T
Buffalo										
New York City										
NORTH CAROLINA										T
Charlotte										
OHIO					PC			TC	TC	T
Cincinnati						P				
Cleveland										T
OREGON										
Portland										
PENNSYLVANIA					P					T
Philadelphia					BT					T
Pittsburgh										
TEXAS								T	T	
Dallas										
Houston										
WASHINGTON					BPTC					
Seattle										
WISCONSIN										
Milwaukee										
UNITED STATES					BT	BP				T T

KEY: B = ineligible to buy or receive  
 P = ineligible to possess  
 T = ineligible to sell or transfer to  
 C = ineligible to carry

Note: For transfer (T) and receipt (B), only those state or local laws which more stringent requirements than the GCA are shown. For possession (P), all state- and/or local-defined ineligibles are shown. Local ineligibility definitions which are identical to or less stringent than those defined by state law are excluded.

\*Table from Jones and Ray (1980)

(b) Dealer recordkeeping and report of sales: The District of Columbia and 30 states require that sales records be kept for all handgun transactions, including a description of the firearm sold, its serial number, and descriptive information on the purchaser. This is similar to the recordkeeping requirements of Federal law. About 20 states require that a report of all handgun sales (usually a copy of the sales record) be sent within a certain time to the local police department or other enforcement agency. Three states (California, Massachusetts, and North Dakota) require that private handgun sales be reported.

Some localities go much further than their respective states in controlling handgun dealers. For example, Charlotte, North Carolina, requires separate licensing and fees to the city and to the county, as well as to state and Federal governments. In Atlanta, Georgia, and Louisville, Kentucky, firearms dealers are required to take fingerprints of purchasers as part of the sales record. Chicago levies a \$400 annual fee for handgun dealers and requires additional recordkeeping procedures. In the District of Columbia, annual license fees are also high (\$300). In all cases, note, the local restrictions are in addition to any applicable state or Federal restrictions.

#### Acquisition and Transfer Controls

(a) License or permit to purchase: There are 10 states which require some form of permit to purchase handguns. The common procedure is for the handgun purchaser to apply for the permit at the local police department, filling out a form with information on address and criminal

record, in addition to fingerprints and photograph which are required in some states. The police department may then conduct an investigation to verify the information on the application form. In most cases, a permit is issued if the purchaser is not among the "ineligible" classes; in some states, applicants have to provide character references to establish good standing in the community (e.g., New Jersey). No state with a permit to purchase requirement requires the applicant to prove his or her need for a handgun, but some cities, such as Boston and Chicago, do. In Massachusetts, local police departments have interpretive discretion to decide whether handguns are purchased "for a proper purpose."

There is a waiting period of varying length before the permit is approved, some states setting statutory maxima of 30 days after which time the application is automatically approved. New Jersey requires a permit to purchase followed by a formal 7-day waiting period before an individual can purchase a handgun.

(b) Application to purchase: There are 12 states which combine an application to purchase with a waiting period which has an effect similar to permit to purchase policies. The difference is that an application to purchase form is completed at the dealer's place of business and then forwarded to the police department, rather than being completed at the police department, as in the case of permits. Once the form is forwarded, the department investigates the application during a formal waiting period. The department notifies the dealer of the approval or denial of the application, and the dealer in turn contacts the purchaser.

Most states requiring either permits or applications to obtain a handgun include private as well as dealer transactions under the legislation. However, Jones and Ray (1980) report, on the basis of interviews with local authorities, that compliance with these permit systems by private parties is usually minimal.

Some differences between the permit to purchase and application to purchase systems are that (1) the application to purchase system usually has less restrictive provisions for eligibility requirements; (2) application to purchase systems do not require fees, while permit to purchase systems often do; and (3) in application to purchase systems, if the police do not specifically deny the application during the specified waiting period, the transfer is automatically approved.

State and city variations on permit to purchase and application to purchase systems usually involved different waiting periods (two days in Pennsylvania to a statutory maximum of 50 days in New Jersey). Cities such as Pittsburgh and Minneapolis circumvent time limits by providing written notification to the seller that the prospective purchaser may be ineligible. Permit to purchase systems usually take longer to process (up to 3 months) than application to purchase systems (usually about 2 weeks). Some other variations: In Dade County (Miami), Florida, a certificate of completion of a handgun safety and firearms law qualification is required and serves as a purchase permit. In Cleveland, handgun owners must have a city-issued ID card, which serves as a purchase permit. In New York State, one must have either a license to possess or a license to carry a handgun to be eligible for handgun purchases. The holder of either type of license must go to the local

police or sheriff's department and obtain a "purchase coupon" before purchasing a handgun.

#### Possession Controls

(a) License to possess: In 6 states and one city (Cleveland), some certificate or license is required to possess a handgun, even if it is kept at home. As mentioned above, a New York State resident must have either a license to possess or a license to carry in order to purchase a handgun. In Hawaii and Mississippi, a certificate of registration is necessary for lawful possession of a handgun. Michigan requires a certificate of safety inspection for every handgun in order for the handgun to be legally possessed. Massachusetts and Illinois have firearms identification cards, which are necessary for both lawful purchases and lawful possession. Each of these systems requires record-keeping that amounts to a form of registration of handgun owners and their handguns. All apply to handguns obtained privately as well as those obtained through dealers.

(b) Registration: Two states (Hawaii and Mississippi) and the District of Columbia have formally labelled registration systems. In theory, registration focuses upon firearms, not upon owners, and does not serve as a screening system. In practice, registration is used to screen firearm owners when law enforcement officials check registrants against ineligible classes, usually by a criminal record check. The District of Columbia's 1977 handgun law contains the most stringent form of registration. It stipulates that only those handguns registered under the GCA may be re-registered and only to the same owners. This

law effectively prohibits all further purchases and transfers of handguns in the District, with the exception of those for law enforcement and some military personnel.

#### Provisions for Place and Manner of Carrying

There are many ways in which states and local jurisdictions regulate the carrying of handguns, concealed or openly, on the person or in motor vehicles. Some classes of individuals are exempted from carrying restrictions in all jurisdictions (e.g., police). Of all the forms of handgun restrictions, those on place and manner of carrying are the most numerous and varied. Although there are many kinds of carrying regulations, they can be grouped under two general headings: (1) those prohibiting the carrying of handguns on or about the person with exceptions and (2) those requiring that persons wanting to carry handguns be licensed by state or local authorities. Most states require that persons applying for licenses to carry concealed handguns show a need for the weapon in the course of their employment.

Variation in the fee for a carrying license is large. Michigan's fee for a 3-year license to carry a concealed handgun is \$3, while Florida's annual license fee to carry a handgun openly or concealed is set by local authorities. In Miami, the initial fee is \$300 and is \$150 for every year thereafter; in addition, individuals issued the license must post a \$100 bond conditional upon the lawful use of the weapon.

#### Penalties for the Use of Firearms in Crime

In 28 states, there are additional criminal sentences (sentence "enhancements") for persons convicted of carrying or using a firearm in

the commission of a felony. Some states (Florida, Maryland, Massachusetts, Minnesota, Missouri, and New York) have a mandatory minimum prison term for such offenders, allowing no possibility for suspended sentence. Massachusetts and New York have a mandatory one-year prison term for persons convicted of unlawfully carrying or possessing a handgun away from home or business, regardless of whether it was involved in a crime. Maryland also has a mandatory minimum sentence for violations of carrying restrictions, but the sentence is mandatory with the second offense. "Mandatory Sentencing" for gun crimes is an increasingly popular control strategy, and so the above tallies will in all probability be quickly outdated.

#### Bans on Certain Handguns

Three states and three cities -- Illinois, Minnesota, South Carolina, Dade County, Denver, and Cleveland -- have provisions which forbid the manufacture, transfer, or possession of low-quality, inexpensive handguns, the so-called "Saturday Night Specials." All three states and Denver use gun metal melting point as the primary criterion, while Dade County and Cleveland use barrel length (less than 3 inches) and caliber (.32 or less). Prohibitions in Denver and Illinois apply to firearms dealers; Denver prohibits transfer only, while Illinois prohibits manufacture and transfer. Minnesota prohibits manufacture by any person and transfer by dealers. Dade County and Cleveland's bans apply to all persons, including dealers. Dade County prohibits transfer only, while Cleveland's ban is the most inclusive, prohibiting manufacture, possession, receipt, and transfer of the "Saturday Night Special."

Coverage of Existing Firearms Regulations

Cook (1979a, 1980) has attempted to estimate the proportion of the U.S. population affected by extant firearms regulations. His analysis reveals that:

(1) 22 states have requirements that dealers be licensed; these states contain 57% of the U.S. population.

(2) 20 states have requirements that officials keep permanent records of handgun transactions; these states contain 51% of the U.S. population.

(3) 23 states have requirements that police be given the chance to check on buyers of handguns; these states contain 64% of the U.S. population.

(4) The estimated percent of the U.S. population 21 years and over that is ineligible from buying a handgun under GCA regulations is 25%, the largest ineligible classification being "users of illegal drugs" (21%), a category which includes users of marijuana, hashish, hallucinogens, cocaine, as well as heroin and other opiates (see Cook, 1980: Table III-2 for the basis for these estimates).

Cook's analysis is based only on state laws and is therefore conservative. Some states lacking any of the above regulations nonetheless contain cities where such regulations are in force, as shown in Table 14-3. If we take the populations of cities that have such regulations in the states that do not, and add the figures to Cook's original state-level data, we get revised and slightly higher "coverage" figures. Specifically, adding in the city data shows that about 60% of the U.S. population is affected by state dealer licensing, 70% are affected by

acquisition or purchase requirements, and 66% are subject to a police check before or after purchasing a handgun.

One portion of SADRI's national survey of local police and sheriff departments (Weber-Burdin, 1981) dealt specifically with police departmental responsibilities for enforcing firearms regulations in their jurisdictions. Table 14-4 shows the responses to each of the regulation items. The proportions shown have been weighted by the size of the department, which correlates at .9 or higher with the size of the jurisdiction, and for this reason, the numbers shown are the approximate equivalent of the proportion of the U.S. population presently covered by each regulation.

Several aspects of the table bear a comment. First, the proportions of the population covered by the various regulations are here higher than in Cook's original analysis and in the above amendment of that analysis. In these data, for example, 85% of the population resides in jurisdictions where firearms wholesalers are licensed (by the state or local community), and 89% reside in jurisdictions where retailers are similarly licensed. Likewise, 75% reside in jurisdictions that require a license or a permit to purchase or carry a firearm. In sum, the "coverage" revealed in these data (on all 15 regulatory measures asked about) is rather more widespread than any previous analysis has revealed. Most of the population of the United States, in short, already lives in jurisdictions that have relatively advanced weapons regulation policies in effect.

Secondly, the data show that police undertake some regulatory activities in these areas even when they are not required to do so by

TABLE 14-4\*

## POLICING EFFORTS IN ENFORCING FIREARMS REGULATIONS

Function	Required by Law and Done By		Not Required by Law But Done By		Not Done in Jurisdiction	Unsure
	Your Dept.	Other Agency	Your Dept.	Other Agency		
<u>Wholesalers/Retailers</u>						
Issue licenses to firearms wholesalers	11%	71	.1	.9	15	2
Issue licenses to firearms retailers	22%	64	0	.1	11	2
Conduct investigations of persons applying to become firearms retailers	30%	54	1	1	9	5
<u>Firearms Controls</u>						
Issue permits to carry firearms openly	18%	23	.8	.2	57	1
Issue permits to carry concealed firearms	38%	33	.5	.5	28	0
Conduct investigations of persons who have applied for a permit to carry a firearm	52%	18	1.8	.2	27	1
Conduct investigations of persons applying for a license or permit to purchase or possess a firearm	44%	26	3	1	25	1

TABLE 14-4 (continued)

<u>Function</u>	<u>Required by Law and Done By</u>		<u>Not Required by Law But Done By</u>		<u>Not Done in Jurisdiction</u>	<u>Unsure</u>
	<u>Your Dept.</u>	<u>Other Agency</u>	<u>Your Dept.</u>	<u>Agency</u>		
<u>Handgun Controls</u>						
Issue licenses, permits or ID cards to purchase handguns	32%	23	1.5	1.5	40	2
Issue licenses, permits or ID cards to possess handguns	26%	24	.4	.6	48	1
Handle registration of handguns	29%	27	15	2	25	2
<u>Longgun Controls</u>						
Issue licenses, permits or ID cards to purchase longguns	14%	17	1	2	63	3
Issue licenses, permits or ID cards to possess longguns	12%	13	1	1	71	2
Handle registration of longguns	9%	17	16	3	53	2
<u>Hunting Controls</u>						
Issue hunting licenses or permits	2%	83	.4	2.6	11	1
<u>Ammunition Controls</u>						
Issue licenses or permits to sell ammunition	8%	55	0	3	25	9

TABLE 14-4 (continued)

\*Data from 1980 survey of a national sample of police and sheriff departments; see Weber-Burdin (1981) for details on questionnaire methodology and weighting of survey items by departmental size. Rows sum across to 100%, except for rounding error.

law. "Voluntary registration" of weapons with the local police is especially common (about 15% of the population, that is, live in jurisdictions where the police register weapons even though the law does not require it).

Further analysis also shows, predictably, that there is regional variation in these matters, with the South and West tending to have fewer firearms restrictions.

#### Summary

The major Federal weapons regulation policies are contained in the Gun Control Act of 1968, and are supplemented, literally, by tens of thousands of additional state and local level laws. The lack of uniform laws across jurisdictions means, inevitably, that the laws extant in any particular jurisdiction will have no necessary implication for the availability of firearms for criminal purposes in that same jurisdiction, and this fact, plus the evidence suggesting a rather substantial across-jurisdiction flow in criminal weaponry, also implies that isolated jurisdictional laws will, in the normal course of things, have few or no dramatic crime-reductive effects. This topic is taken up in detail, and the above conclusion generally confirmed, in the following chapter.

FOOTNOTES

1. The Federal Register (1979), Vol 44, No. 119, Part II is the most recent Federal publication of state and local firearms regulations.
2. Just what the Constitution does and does not allow the Federal government to do in this area is, of course, a hotly contested issue about which we can claim no expertise. Certainly, state-level firearms regulations pose no Constitutional issues and for this reason, state (and local) regulations frequently are more strict by far than the corresponding Federal regulations, as the following review makes plain.
3. This historical review of Federal involvement in regulating firearms is taken from Zimring's (1975) more detailed review.

CHAPTER FIFTEEN

WEAPONS CONTROL LEGISLATION AND EFFECTS ON VIOLENT CRIME

I. Introduction:

While there is much disagreement on many of the empirical facts about the extent of firearms ownership and its distribution in the United States, the level of accompanying rancour appears to be almost polite murmurings in comparison to the extent of disagreement and attendant feelings about legal control of weapons. Gun control legislation, existing and proposed, produces partisanship and fervour beyond any of the other issues surrounding weapons issues in the United States. The issues involved range in loftiness from constitutional questions -- What does the 2nd Amendment really mean two centuries after its enactment? -- to tricky technical research issues -- Do the trends in crime rates after the enactment of a gun control statute signify any impact on weapons related crimes?

We will leave the philosophical and legal issues involved in gun control legislation to those scholars who have special competence to deal with them; in this chapter we will be concerned with reviewing the technical issues involved in assessing the effectiveness of such legislation when enacted and with reviewing some of the landmark researches that have attempted to estimate the direction and magnitude of such effects. The next section of the chapter takes up some of the critical technical issues that arise in the assessment of the impact of legislation on some area of human behavior. The third section reviews the procedures and assesses the findings of the major studies of impact assessment. A final section draws out the implications of preceding

sections for future research on the effectiveness of gun control legislation.

II. Issues in the Assessment of the Impact of Gun Control Legislation:

The science and art of assessing the impacts of the activities of government agencies and of legislation have grown considerably in sophistication over the past two decades (Rossi, Freeman, and Wright, 1979; Cronbach, 1980; Cook and Campbell, 1980). While there had been some attempts to assess effectiveness since the late nineteenth century appearance of the social and behavioral sciences, the development of this field received a considerable boost from the skepticism that accompanied the Great Society programs of the late 1960s. Whatever the reason, legislators and public officials then began to ask social scientists to estimate whether or not, e.g., Head Start or the Job Corps, was "working." This interest in impact assessment also extended to legislation that was not accompanied by programs but which changed procedures, shifted sanctions, or otherwise changed the ways in which established government agencies operated.

The main problems involved in estimating the impact of some government action are well known. Solutions to these problems that are satisfactory beyond question to every skeptical reviewer are much more difficult to provide. Any and all assessments of effectiveness are subject to question and hence vulnerable to more or less decisive criticisms.

The two main problems in assessment are as follows: First of all, there is the issue of defining and measuring the intended effects of the governmental action. The preambles to legislation which set forth legislative intent tend to be stated in global and rather vague

terms. For example, legislation authorizing housing subsidies for poor families may be described as intending to improve the "quality of life" of the intended beneficiaries. While there may be very good reasons for the vagueness of legislative intent, it then becomes difficult to decide upon specific measures that can index the success of the program in question. Thus, should an improvement in the "quality of life" be measured by changes in the levels of satisfaction with housing or should one measure the extent to which housing fulfills criteria set forth by public health and/or housing specialists?

The second main problem is defining what is to be considered a sign of effectiveness. It is easy to define the effects of a program or legislation as changes that would not have occurred if the program or legislation had not been enacted, but then the problem becomes how best to compute what would have happened in the absent condition. There are many false signs of effectiveness; crime rates may decline after the enactment of a gun control statute, but crime rates may have been declining in any event; gun control legislation may be enacted at the same time that penalty changes are introduced into the criminal code and the effects of the latter may be mistaken for the effects of the gun control legislation, etc. As we will see in reviewing the studies of gun control statute effectiveness, establishing the ceteris paribus conditions that will permit reasonable estimates of what would have happened absent the gun control legislation is perhaps the most serious problem facing researchers who venture into this area.

How these (and other) problems manifest themselves in the assessment of gun control legislation is discussed in detail in the next subsection of this chapter.

A. Deciding on Possible Effects of Gun Control Legislation:

The American manufacturing and distribution system and the patterns of gun ownership and use are not well known or understood. Yet legislation that is designed to alter the patterns of gun usage in crime needs necessarily to build upon some implicit or explicit model of these systems and on some empirically based parameters concerning size and distribution of household firearms stocks that describe the systems. To be more specific, if a legislator were to decide that registration of all guns held by civilians and police should be required by law, that legislator should know how many such guns would need to be registered and how many new registrations or transfers of ownerships would be generated year to year. It would obviously make a considerable difference in the costs of running a registration system if the total stock of guns in the hands of civilians and the police were of the order of 120 millions or 200 millions or whether the annual new registrations and transfers amounted annually to 10 millions or 20 millions. In addition, a registration system that was based on the assumption that all gun transfers proceeded through the intermediary of a gun dealer would miss the apparently large number of transfers that take place among private citizens. And so on.

The implicit model or models of the system surrounding the distribution and usage of guns determine as well the kinds of consequences one can anticipate to follow from a particular legislative act. Thus if one assumes that the use of guns in, say, robberies is largely premeditated (i.e., a person carries a gun and looks for a target after having decided to commit a robbery), then it might make some sense

to raise the penalty for robberies in which guns were used in order to raise the potential costs to robbers. Alternatively, if one believes that gun owners engage upon robbery when they are short of funds, then one might want to establish a negative means test for permitted gun ownership, allowing only persons with steady employment and/or sources of legitimate income to own and/or possess guns.<sup>1</sup>

Perhaps the main issue in what sort of model of gun distribution or of gun usage one should have in mind in the drafting of legislation centers around whether the level of crime affects the stocks of guns in civilian hands. Those who believe that the number of guns in civilian hands affects either the amount of crime or the types of crimes committed are in favor of measures that would reduce the stock or change its distribution (i.e., keep guns out of the possession of persons who would commit crimes). Those who believe otherwise are doubtful whether any attempts at gun control would affect the level of crime, perhaps asserting that changes in the stocks of weapons or their distribution would lead to the substitution of alternatives to guns as weapons in crimes. Indeed, the possibility of these "substitution" effects means that legislative impact assessments should take such possibilities into account.

The main issue is further complicated by the fact that mixed models may be easily thought of. For example, income producing crimes of certain sorts may be affected by the stock of weapons, e.g., bank robberies or payroll robberies, while "crimes of passion" (unpremeditated murders or assaults) may simply be unaffected by the stocks of guns, assaulters and murderers using any weapons that may be at hand.<sup>2</sup>

All of the above discussion leads to a differentiation among three broad classes of anticipated effects:

1. Intermediate effects: These are effects anticipated within the gun distribution system and in the patterns of gun distribution and usage.
2. End Effects: These are anticipated effects that are more or less desired as the outcome of the legislation and upon which the effectiveness of the legislation would be judged.
3. Side Effects: These are effects that are not necessarily intended but which are also a consequence of the legislation. Of course, a side-effect could be beneficial or unwanted; the main point is that a specific governmental action can often have effects that were unintended and sometimes very much unwanted.

The distinguishing characteristic of intermediate effects is that they are intended to occur and constitute the mechanisms through which end effects are achieved. Thus a gun control statute may have the desired end effect of reducing gun use in assaults, but its desired intermediate effect is to lower the availability of "Saturday Night Specials." Of course, a given piece of legislation may be quite successful in producing its desired intermediate effect but not at all in achieving reasonable levels of success in its desired end effects. Conversely, desired end effects may appear without the desired intermediate effects, although this would be less likely.

The point in distinguishing among the three types of effects, as indicated above, is to emphasize again that a given statute is built

around a model of how the social system in general works and how the particular phenomenon in question proceeds, specifying instrumentalities (intermediate effects) for achieving a set of particular ends (desired end effects), hopefully with no harmful side effects. This point also emphasizes the importance of some of the research discussed in previous chapters; an accurate and valid empirical understanding of the size, distribution, and usages of the stock of weapons held by American households is essential for the development of effective legislation aimed at controlling gun usage in violent crime.

Figure 15.1 lists some of the possible end effects, intermediate effects, and side effects that might be considered in an assessment of weapons legislation. Although the list is far from exhaustive, it will provide the reader with at least an impression of the wide variety of options available for choices among desired intermediate and end effects and the kinds of side effects that might accompany attempts to regulate the distribution and usage of firearms. Note that while this discussion is focussed on "firearms," easy modifications of the discussion to restricted classes of firearms, e.g., handguns, certain types of handguns, etc., can be made without loss of meaning. The inventory of desired effects includes some which are clearly outside the realm of current discussion and are included here mainly for the purpose of providing a more complete set of policy alternatives. Clearly, only those falling within the current "policy space" -- those proposals which are politically acceptable to significant portions of the decision making elites -- are likely to be actually considered.

An effective statute can be conceptualized as one that specifies

FIGURE 15.1

INVENTORY OF DESIRED END EFFECTS, INTERMEDIATE EFFECTS AND  
SIDE EFFECTS OF POTENTIAL GUN CONTROL LEGISLATION

I. Desired End Effects:

- A. Reduction in use of weapons in crime.
- B. Reduction in stock of weapons held by private households.
- C. Reduction in weapons in accidental injuries.
- D. Reduction in stock held by "criminals."
- E. Reduction in stock of certain types of weapons (e.g., handguns, "Saturday Night Specials," etc.).

II. Desired Intermediate Effects:

- A. Regulating the weapons production system.
  - 1. Restrictions on the manufacture of weapons
  - 2. Restrictions on the import of weapons
- B. Regulating the distribution system.
  - 1. Restrictions on the sale and transfer of weapons
- C. Regulating possession.
  - 1. Restrictions on ownership
- D. Regulating usage.
  - 1. Restrictions on carrying weapons
- E. Raising the costs of weapons ownership and use.
- F. Raising the penalties for improper usage.

III. Possible Side Effects:

- A. Substitution of other weapons for firearms in crime.
- B. Creation of illegal manufacturing, distribution, and transfer systems.
- C. Higher costs to the criminal justice system.
- D. Higher costs to the administering agency.
- E. Higher costs to weapons users.

an intermediate effect that is administratively feasible, efficient, economical and corresponds to an accurate understanding of the weapons distribution and usage systems and is directed towards an appropriate set of desired end effects. It is easy to think of statutes that would not fit the bill. For example, a statute that intends to reduce the stock of weapons held by criminals through regulating the manufacture and import of weapons may simply raise the costs of weapons acquisition to all who desire to own weapons. Such a statute ignores the difficulty of identifying who is a criminal, assumes that changing prices would affect criminals possibly more than other users of weapons, and so on.

B. Operational Measures of Effects on Crime:

Although the major intent of most proposed and actual gun control legislation is to affect the criminal usage of weapons, completely satisfactory measures of such improper usages are difficult to come by. Crime, as such, goes largely unmeasured: all that is ordinarily available are reports of crimes that have been detected by someone -- victim or witness -- who reports the event to either the police or to a survey interviewer. All the instances in which, for example, burglars carry weapons cannot be reported unless the burglar is actually seen by a witness and the weapon is visible in that encounter. Weapons may be carried and not used; witnesses may not be present to observe; and victims may not detect the commission of a crime or be willing to report the event either to the survey interviewer (in the case of victimization surveys) or to the police (in the case of police generated statistics on crimes).

The defects of the Uniform Crime Reports are too well known to bear repeating in this context. Victimization surveys correct some of the deficiencies of police generated statistics, especially that of under-reporting, but create others. Victimization studies can contain many accounts of events that are either very trivial or only questionably crimes and are subject to the many defects of recall frailties. In addition, most of the national victimization surveys routinely undertaken are usually too sparsely taken in any one jurisdiction to be useful, say, in studying the impact of gun control legislation in a single city, county or state.

The problem with errors of measurement is that at best such errors tend to obscure the estimated effects and, at worst, may distort such estimations. Thus, if the errors are "random" but extensive, small effects will be hard to distinguish from the ordinary "noise level" present in criminal justice statistics. If the errors are biased, e.g., systematic under- or over-reporting of some types of events, then even genuine effects may be offset and impossible to detect. The worst possible situation is if the errors of measurement themselves are affected by the gun control legislation. For example, we see in a later section (Pierce and Bowers, 1979) that the Bartley-Fox amendment enacted in Massachusetts appeared to affect positively the willingness of victims to report weapons related crimes to the police, thereby creating an apparent rise in the number of such crimes, thus tending to obscure the effects of the Bartley-Fox amendment itself.

Of course, very large effects -- dramatic and drastic declines or increases in certain types of crimes -- are likely to overcome the

errors of measurement problem, but such drastic and dramatic effects are unlikely to occur, least of all in the short run. If there is a single lesson to be learned from the past two or three decades of federal legislation addressed to social problems of various sorts, it is that no problem of any magnitude yields very dramatically to any single legislative effort, or even to a broad program of legislation (such as the War on Poverty), and certainly not over a short period of time. A gun control bill that is designed to remove certain types of handguns from the stocks held by private persons by prohibiting their manufacture, for example, may take years to manifest significant effects since the rate of depletion of existing stocks may be quite low.

C. The Problem of Long-term versus Short-term Effects:

The effects of any statutory change can be expected to take some period of time to be manifest, depending on the changes such legislation requires to be made in existing administrative arrangements. Thus a gun registration law that requires the establishment of a new agency can only manifest effects after the agency has been set up, administrative regulations established, and the everyday procedures of administration worked out. Of course, some changes may require minimal adjustments and hence can be expected to show effects after a shorter period, for example, a statute that increased penalties for convictions on weapons related felony charges. It may also take some time for side effects to appear. For example, increasing the prison sentence lengths of persons convicted of weapons related crimes may produce the unwanted side effect of prison over-crowding, a potential source of pressure on

prosecutors and judges to develop accommodations to the new statutes that would result in lower prison sentences than prescribed in the statute.

These considerations argue for careful consideration of both long-term and short-term effects of any gun control legislation that is enacted. Short-term effects may be lower or higher than long term and vice versa, depending upon the kinds of impacts such laws may have on various parts of the criminal justice systems to which they apply.

D. The Problem of Dosage:

The problem of dosage is simply whether "enough" of the remedy prescribed in the statutes has been administered. Thus, it may well be that careful and conscientious monitoring of guns sales and transfers could interdict criminals from possessing weapons, but if insufficient funds are given to the agency with responsibility for monitoring such sales and transfers, conscientious and careful scrutiny of such transactions cannot be accomplished. Or, if penalties for weapons-related crimes are not raised enough, no deterrence effect may be shown. And so on. The issue of dosage looms large in the discussion of the effects of the 1968 federal gun control legislation (Zimring, 1975) in which it is claimed that with inadequate funds for monitoring the dealer licensing system thus instituted, the legislation fell far short of interdicting cross-state weapons sales.

The dosage issue emphasizes the importance of careful analysis of the implementation of statutory changes. Dosage problems often show up quickly in the assessment of intermediate effects; thus, the 1968 gun control legislation was found very early not to prevent the sales

of weapons across state lines when the exporting state had less stringent requirements on gun ownership than the receiving state.

E. Establishing Ceteris Paribus Conditions:

As discussed earlier, one of the main problems in evaluating the effects of any statute is to establish the proper conditions for estimating what would have occurred without the statute. The simplest and therefore most tempting solution is to consider before- and after-enactment comparisons of, say, weapons related crime rates. The drawback is that there are many other things happening at the same time that can affect the crime rates, either depressing or elevating them. Thus a comparison of crime rates of any sort before and after the enactment of the 1938 weapons legislation would have led to the naive conclusion that the statute was quite effective in lowering crime rates nationally. Trends in the 1930s continuing into the 1940s consisted of a gradual decline in crime rates nationally; more careful consideration may lead to the likely conclusion that the trends were neither accelerated nor impeded by the passage of that legislation.

Before and after comparisons are reasonable only if the analyst is able to properly model the prevailing trends before enactment in order to make reasonable predictions about post-enactment levels of crime rates. The time series analyses performed to assess the Massachusetts Bartley-Fox amendment (Pierce and Bowers, 1979; Deutsch and Alt, 1977) are excellent illustrations of how this may be accomplished. This is not to imply that such techniques can be applied mechanically. On the contrary, time series analyses depend very heavily on selection of models that most appropriately characterize the existing before-

enactment trends. The models selected by Deutsch and Alt (1977) in their early analysis of Bartley-Fox were challenged as to their appropriateness by Hay and McCleary (1979). In addition, it may sometimes happen that other changes occurring around the time of the statute enactment may make it difficult to model appropriately what would have been expected absent the statute in question. Thus, for example, a gun control statute that is enacted at the same time that changes are made in police practices will have its effects confounded with those of the police reorganization, an event that likely cannot be modelled.

Time series analyses are perhaps the only way to deal with estimating the effects of national statutory changes. Where changes take place in some jurisdictions and not in others, comparisons across jurisdictions may provide yet another way of estimating what would have happened absent the statute under scrutiny. The issue here is, What are appropriate comparison jurisdictions? The general principle is that a jurisdiction ought to be compared with others that are as nearly identical as possible. Since no two jurisdictions are exactly alike, comparability is always a matter of degree. Adjacent states in the same region are perhaps more comparable than more distant jurisdictions; nearby cities of comparable size and demographic composition are likely more comparable than more distant cities or ones of different size or composition. And so on. The choice of comparison jurisdictions is of course, more a matter of art and judgment than science and any choice is subject to dispute. Perhaps the best strategy is to pick a number of comparison jurisdictions (see Pierce and Bowers, 1979) and if the majority of such comparisons support a particular interpre-

tation, the conclusions are considerably strengthened.

Under some special circumstances, it may be possible to conduct actual field experiments with gun control measures, especially ones which would test out alternative means of implementation. The actual example that is closest to an experiment of the sort contemplated was an attempt to provide maximum administration of the 1968 gun control law (as described in Zimring, 1975) in which licensed gun dealers in nearby Maryland and Virginia localities were monitored carefully to detect sales to District of Columbia residents, in violation of the 1968 Act. The impact of the "experimental" dosage level was measured by observing the trends in weapons-related crimes within the District.

F. Some General Observations on Impact Assessment:

The discussion in this section is designed primarily to alert the reader to some of the problems that face researchers who attempt to make assessments of the impact of gun control statutes.<sup>3</sup> Perhaps the most important message is that such assessments cannot be made sensibly without intimate knowledge and understanding of how guns are distributed and used in the United States and in the particular jurisdictions in question. Such knowledge is useful in understanding how a given piece of legislation is intended to work and how it is likely to work -- through what mechanisms and with what changes in the structure of incentives and sanctions for criminals, police, victims, courts and other participants in the general criminal justice system.

Of course, such knowledge is agnostic a priori with respect to whether it is at all possible to achieve the desired amount of control

and desired effects on crime. Indeed, one of the major motivations for increasing the depth and accuracy of our general knowledge concerning firearms and their distribution is to be able to make such predictions. This chapter assumes that gun control may be effective in achieving some ends, but that is simply a working assumption for this discussion.

Also of importance is the expectation that massive and dramatic crime-reductive effects are unlikely outcomes of most contemplated gun control statutes. This expectation is founded on an understanding that crime rates, in particular, are affected by many trends in the society and that the contribution that gun control could make to changes in crime rates is likely to be relatively slight. The implication for evaluations of gun control impacts is that such research efforts have to be made carefully since the effects to be detected are likely to be slight and easily swamped by the noise level that ordinarily exists in the system. Another implication is that findings will usually be subject to dispute; slight changes in the specification of research models of the gun control legislation effects are likely to lead to changes in the estimated sizes or even the directions of effects.

### III. Landmark Evaluations of Gun Control Effects:

This section reviews some of the major attempts to assess the effectiveness of gun control legislation that was in place at a point in time or had been newly enacted. The studies were chosen for scrutiny both because each has been cited repeatedly in the literature on gun control and because they each represent major approaches to the problem posed by evaluation.

The three major approaches, each described in a subsection below,

are (i) cross-sectional studies which attempt to estimate the effects of "natural variations" in gun control legislation by states or other political jurisdictions on weapons-related crimes, (ii) time series studies which look at the shifts in relevant crime rates that occur at the time of the introduction of a change in gun control legislation; and (iii) "process studies" that attempt to show how particular changes in gun control policies are implemented through intermediate effects.

#### A. Cross-sectional Studies of "Natural Variation" in Gun Control:

The 50 states and thousands of counties and municipalities that exist in the United States provide considerable opportunity for "natural variation" to arise in the way in which particular political jurisdictions attempt to regulate the possession and use of weapons. While state legislation ordinarily has priority over local ordinances and laws, states often delegate to localities the authority to enact additional regulations that go beyond what the state may require.<sup>4</sup> Generally, regulations tend to be more restrictive in states in the Northeast region of the United States, as opposed to the South and the West and more restrictive in larger as opposed to smaller cities and counties. Thus among the most restrictive states in the Union are New York, Massachusetts and New Jersey. New York City, Boston, and Chicago are more restrictive than most cities in the country.

It would seem only sensible to attempt to trace out the implications for weapons-related crimes of this natural variation; indeed, two studies reviewed below attempt to do so for the 50 states.<sup>5</sup> The problem, of course, is that the 50 states are not comparable one to the other, being composed of varying mixes of demographic, economic

and even historical factors that might conceivably be affecting the crime rates of those states, independently of gun control legislation. Indeed, one might easily entertain the theory that the underlying conditions that induce legislators to enact gun control legislation are the same that produce state gun-related crime rates. Hence the assessment of gun control legislation effects depends for its plausibility on the researcher's ability to unravel the confounding effects of state socio-economic, demographic and political characteristics from legislative effects. The two studies described below take two different approaches, leading to markedly different conclusions concerning the effectiveness of gun control legislation.

(1) Geisel et al. (1969)<sup>6</sup>: Using an inventory of state regulations in effect at the time, Geisel and his associates attempted to relate statistically a set of crime, accident and suicide rates involving firearms to a combined index formed from the state regulations. The index displayed in that article is one of several dozen ways in which numerical scores were given to each state according to the particular configuration of regulations in effect; the scoring system which produced the highest relationship to the largest number of gun-related crime rates was selected for discussion in the article.

Recognizing that crime rates were also dependent on other characteristics of the states, the authors entered into a multiple regression model several state characteristics: average per capita income, median school years completed by adults, males per 100 females, police employees per 1,000 residents, proportion black, population density, median age, and licensed hunters per capita. Multiple regression equations linking

the dependent variables with the above along with each state's numerical score on the regulations index yielded sets of effect coefficients for all the independent variables. The coefficients for gun regulations tended to show for most dependent variables that the stricter the gun regulations in each state, the lower the deaths, injuries, suicides and crime committed with guns. The authors further estimate that if each state brought its regulations up to the strictness (then) of New Jersey, several hundred deaths from firearms would be averted each year in the country as a whole. Similar calculations were made over 129 cities using state regulations in which the cities were located.

The main problems with the Geisel et al. analyses center around the statistical model used. As discussed earlier, establishing the ceteris paribus conditions in cross-sectional studies requires that the investigator have a fairly complete understanding of how the particular crime rates are generated. The variables entered into the equations as "controls" are largely ad hoc. Most are known correlates of crime rates, but they are not held together by any systematic theory of how crime rates are generated. For example, a theory of crime that weighed deterrence heavily might have led the investigators to include clearance rates, average sentences given out to persons convicted of gun-related offenses, or other similar variables as part of the analysis. Since the theoretical relevance of the control variables used was not explained (and hence cannot be evaluated), one can only suspect heavily that the ceteris paribus conditions may not be plausible. In other words, variables may be left out, causal relationships among variables may be wrongly specified, and some variables may be simply alternative proxies for the same underlying phenomenon. In short, the analysis presented is not very plausible just because it is not driven by a plausible or explicit theory about the dependent variable.

(2) Murray (1975): The contrast between Murray's research and Geisel et al. (1969) described above illustrates dramatically the effects of positing alternative statistical models in cross-sectional studies of the effects of gun control legislation. Murray used data from the 1970 Census to characterize each of the states along with Uniform Crime Report data from the same year. State regulations concerning guns were modelled as a set of dummy variables using information obtained from Bakal (1966) rather than summarized into an overall numerical index, as in Geisel et al. (1969).<sup>7</sup> In addition, certain variables were used in Murray's analysis that had not been employed by Geisel, including the log of total state population, percent unemployed, percent below the poverty line, percent of population who were interstate migrants and so on. Thus, the implicit underlying theory of firearm violence employed by Murray is substantially different from the "theory" that appears in Geisel et al. Still, Murray provides little rationale for or discussion of his model, either in general or in the specific ways in which it departs from the Geisel model discussed above.

Also, the form of the statistical analysis employed by Murray was different in important ways from that employed by Geisel. Using a backward stepwise regression method, Murray "forced" all the independent variables (save the gun regulation dummies) into the equation, first allowing those variables to absorb as much variance in gun-related crimes as possible, then adding the gun control dummies and allowing them to absorb any additional variance. While this is a perfectly acceptable procedure for many purposes, it should be noted that its use implies a model that allocates any effects of the state character-

istics that may be shared with the gun control legislation to the former. In other words, if legislators are more inclined to institute licenses to carry firearms in states that are outside the "Old South" because it is part of non-Southern culture to do so, any joint determination of crime rates by region and gun control legislation is allocated entirely to the regional variable in Murray's formulation.<sup>8</sup> This procedure, in short, "stacks the deck" against such effects as the gun legislation variables might otherwise produce.

Murray's analysis also includes data on hand gun ownership obtained from Harris and Gallup polls. Since neither of these two surveys are based on samples large enough to permit state by state tabulations only levels of gun ownership in four regions of the U.S.<sup>9</sup> were used, a decision that conceals potentially large variations from state to state within regions in the possession of guns by households (see Chapter Seven).

Murray's analysis indicates that there are no significant effects of gun control legislation on the crime rates in question. These results are obtained for homicides, assaults, robbery, suicide, and gun accidents.

Murray's analyses are no more plausible than Geisel's. Taken together, the two studies confirm that cross-sectional studies of this sort are highly sensitive to alternative specification of the statistical models employed, and possibly to the analytical strategies employed as well. Cross-sectional studies that are not informed by reasonable theoretical models of how states, cities or regions vary in crime rates can produce misleading and contradictory results, and until such theories are developed, little of substance can be concluded from studies of this type.<sup>10</sup>

B. Longitudinal Studies of Gun Control Legislation:

A much more promising strategy for examining the impact of gun control legislation is the before-and-after longitudinal study. States and other political jurisdictions shift from more permissive to less permissive legislation concerning guns (and, sometimes, vice versa) whenever new gun legislation is enacted. These changes, under proper circumstances, obviate many of the difficulties in specifying ceteris paribus conditions since the jurisdictional experiences before the new legislation can be contrasted with those occurring subsequent to enactment. Of course, there are many caveats that have to be observed, since the legislation changes may be accompanied by other shifts that could also influence the anticipated outcome, e.g., an urban disturbance occurring around the same time may increase gun possession, or a rise in unemployment among youth may increase the number of robberies, and so on. But, the difficulties in using such shifts in legislation are considerably less than those involved in the analysis and interpretation of cross-sectional differences.

One potentially very serious problem in any time-series analysis is what can be called the "timing" problem. Imagine a time-series data base that is tracking some variable of interest: the crime rate, unemployment, worker productivity, etc. In the normal course of things, due to the simultaneous effects of all other variables that influence the variable of interest, the time-series "bounces" up and down between less desirable and more desirable conditions, that is, there are "troughs" and "peaks" occurring normally in the time-series as part of its usual or customary behavior. The "timing" problem is simply that policy inter-

ventions tend, almost invariably, to be instituted during the "troughs," that is, as the variable trends towards less desirable states, for the very simple reason that the inclination to "do something" about a problem sharply increases when it appears that the problem is getting worse. And since the normal behavior of the time series is to bounce, troughs tend to be followed by peaks, again as part of the normal behavior of the series. It is thus easy to see that the normal fluctuation of the time series can be easily mistaken for evidence of a positive program effect. The solution to the problem, of course, is to let the post-enactment series run its course over a reasonable span of time before impact assessment is attempted. But legislators who want to know whether the program is "working" are seldom satisfied to hear that it will be several years before the question can be reasonably answered.

The major longitudinal studies can be roughly classified into two types, process studies and time series analyses. The former are concerned mainly with the impact of the new legislation on the ways in which gun control legislation is implemented and less on the outcome in terms of the use of weapons in crime, while time series analyses are more concerned with measuring the effects of legislation on crime rates of various sorts. Both have value; process studies address the critical issue of the intermediate effects of such legislation while time series studies are concerned primarily with end effects.

(1) A National Process Study: The 1968 Federal Gun Control

Law (Zimring, 1975): Zimring's (1975) study is perhaps the most extensive examination of the experiences with the most recent major federal legislative effort in the direction of gun control. The 1968 Act was a complex variety of measures aimed at eliminating interstate sales of guns (thereby intending to aid states with stronger gun controls from being undercut by dealers in more permissive states), prohibiting sales to certain classes of individuals, notably minors, persons convicted of felonies, mental defectives and drug users, and limiting imported firearms by prohibiting the import of surplus military firearms and restricting imports largely to those weapons that could be used for "sporting purposes."<sup>11</sup> Administrative responsibility for the Act was given to the Bureau of Alcohol, Tobacco and Firearms within the Treasury Department.

Zimring's account of the first five years of the operation of the 1968 Act was limited primarily to an analysis of the operating assumptions of the Act and a description of its administration.

Zimring notes that although the Act called for licensing of dealers who were to maintain records of their firearms transactions, very little was done to police the implementation of the licensing and transaction regulations. Although cases referred for prosecution increased considerably after the Act was passed, the sheer volume of transactions was such that almost any extensive policing of dealers would have been far beyond the capacity of BATF to undertake. The considerable task of investigating applications for dealers' licenses (there were about 160,000 licensed dealers in 1972) was simply more than the relatively

small handful of Bureau agents could be expected to undertake. Inspecting dealer records for compliance with provisions of the Act, much less investigating whether dealers were complying with the exclusionary provisions of the Act, were completely beyond the capacity of the Bureau.

Much more success was achieved by the provisions that regulated the importation of certain types of guns. Aimed at the importation of "Saturday Night Specials," the Act left it to the Bureau to find a specific definition. The Bureau came up with a quantitative "factoring" index which took into account, among other things, barrel length and weapon weight. The consequence of the introduction of this definition was to lower the number of handgun imports significantly during the first few years after the passage of the Act. However, as Zimring was able to show, domestic production of handguns increased to fill at least part of the gap.<sup>12</sup>

Zimring attempts to show that the lowering of handgun imports had some impact on certain gun-related crimes, especially handgun homicides and firearm assaults. While it is apparent that the rates at which such offenses increased began to decline after 1969, it is not at all convincing that decline in importation produced the rate decline. For one thing, we do not know the price elasticity of weaponry for persons who commit crimes. It may well be that a doubling or even tripling of the price of handguns on the legitimate and illegal markets would have no effect on their ownership for illicit purposes. Secondly, it is not at all clear that "Saturday Night Specials" are the weapons of choice for persons who use weapons in the commission

of crimes (see Chapter Ten). Finally, it may well be that the rate of increase in the relevant crime rates would have begun to decline in any event and that the coincidence noted by Zimring may not indicate any causal link after all.

Zimring also attempts to measure the ability of the Act to lower sales by dealers of handguns to persons residing out of state. Since the local gun laws in Boston and New York are enforced strictly enough to, in effect, prevent sales of weapons within each city, weapons perforce have to be procured from out of the city and in most cases from out of the state. Trends in handgun homicides in the two cities, however, indicate no wiggles in the period after 1968 that would be consonant with the interpretation that the law was effective in reducing interstate sales. Indeed, if anything, it appeared that firearm assaults increased in New York and Boston more than in other places throughout the nation.

Zimring's analysis points up sharply some of the points made earlier in this chapter about the importance of having a firm empirically grounded understanding of the facts concerning gun usage in crime before embarking on legislation. It is not entirely clear that Saturday Night Specials are the weapons of choice for criminals; rather there is developing some evidence that such weapons are bought mainly by persons who are not professional criminals. Secondly, the pattern of interstate commerce in guns on the retail level was not well understood; hence regulation of sales by dealers to out-of-state purchasers could not be adequately policed for compliance. Finally, a method of gun regulation that implied a considerable increase

in BATF manpower should have been accompanied by such increases in order to achieve any effectiveness. Since the Act was based on little or no knowledge of the phenomena it was supposed to control, we should not be surprised that it produced few or none of the intended effects (the reduction of handgun imports possibly being the only major exception).

While Zimring's analysis does not make any strong statements concerning the impact of the law on gun-related crimes (indeed, it could not do so), the analysis is quite valuable because it investigated the important issues in administration as described above. For example, an import restriction that actually did not restrict imports could have no impact on weapon usage nor could a registration system for sales have any impact without some efficient means for monitoring compliance. Hence such "process" studies prove to be of value even if they cannot and should not lead to estimates of effectiveness.

(2) Local Process Studies of the Massachusetts Bartley-Fox Amendment (Beha, 1977; Rossman et al., 1979). In 1974 the Massachusetts legislature passed an amendment (known as the Bartley-Fox Amendment) to its gun control laws which expanded Massachusetts licensing procedures and made unlicensed carrying of firearms an offense with a mandatory sentence of one year, forbidding the suspension of sentences, nonfiling of cases, plea bargaining and other devices used by courts and prosecutors to avoid felony convictions when they thought it advisable.<sup>13</sup> The passage of the Bartley-Fox Amendment was accompanied by several months of widespread publicity before it became effective in April 1975.

In a very fine-grained study of process, Beha examined the facts of every arrest charge involving weapons that was processed through the courts of Suffolk County (Boston) in the period April through September 1975, as well as a parallel set of cases in a six month period in 1974. In addition, UCR and Boston Police Department arrest records, statistics on the issuance of firearms permits, and interviews undertaken with police, prosecutors and defense attorneys were employed in the analysis.

While Beha did undertake to assess the effectiveness of the Bartley-Fox Amendment in lowering firearms-related offenses, a major portion of his analysis centered on the ways in which the Suffolk County Courts handled such charges. Initially, there was some concern that the courts would resent the loss of discretion imposed by the Bartley-Fox Amendment and work out evasion tactics which would restore their ability to deal flexibly with cases of weapons carrying violations. In addition, it was also believed that arresting police might be reluctant to enter a carrying charge because of the mandatory penalties carried in the Bartley-Fox Amendment.

Beha's study of court cases indicated widespread compliance with the provision of the Amendment that restricted judges' discretion. Persons charged with weapons carrying violations were either acquitted or sentenced as the law required, whereas before the enactment of the Bartley-Fox Amendment a fairly large proportion of such cases were given suspended sentences or kept on file for periods of time without sentencing.<sup>14</sup> In short, it appeared to Beha that, at least for the first six months of experience with the law, it was being properly

administered by the courts.

Inspection of the Boston police arrest records also led Beha to the conclusion that the Boston police were not reluctant to arrest on carrying charges. Although there was a drop in such arrests after Bartley-Fox, there was no evidence that this was due to arresting officer discretion; rather, inspection of additional charges filed indicated that the association of carrying charges with other charges remained the same before and after Bartley-Fox.

Beha's study also indicated that the Bartley-Fox Amendment had little effect on other weapons-related charges. Thus if a person was charged with armed robbery in which an unlicensed handgun was used, a weapons carrying charge was ordinarily not filed as an additional charge. Indeed, the latter carried with it under Bartley-Fox a much smaller mandatory sentence than ordinarily given out for armed robbery and hence did not add much to the prosecution of the more serious weapons-related crimes.

Beha also made some comparisons of police reports of weapons-related crimes before and after Bartley-Fox. We do not discuss those comparisons in any great detail because they are ambiguous in meaning without careful specification of the ceteris paribus conditions.

Beha's process analysis again shows the importance of working out and studying in detail the process of enforcement in the case of gun control legislation. There were several points at which the operations of the law could have been vitiated; police may have stopped entering carrying charges; prosecutors may have found ways in which to use the charges in plea bargaining with the accused; and judges

could have avoided the mandatory sentencing provisions by dismissing more easily certain types of cases. Note that the issue here is not whether things have changed or not, but whether the cases of detected violations of carrying weapons are treated in the courts as the legislation apparently demands that they be treated.

Rossman *et al.* (1979) extended Beha's earlier study in several directions. Most important, the time period of analysis was extended beyond the first six months after Bartley-Fox came into operation; also, the jurisdictions studied included Springfield and Worcester (in addition to Boston); and the data collected included systematic interviews with prosecutors, defense attorneys, policemen, and judges and clerks of the courts. In addition, a much more sophisticated before-and-after analysis of crime rates was undertaken (to be considered separately in the next subsection).

Rossman and his colleagues found that there were differences in the accommodation of the criminal justice system to Bartley-Fox over time. In the year immediately following enactment, enforcement appeared to be pursued more vigorously than two years later. Arrests on carrying charges increased after enactment but then declined in the following year. Interviews with policemen indicated a widespread lack of clear understanding of the provisions of the law and its applicability, resolved in favor of enforcement in the first year and otherwise in the second year. Some of the courts systematically undercut the law by downgrading charges of carrying to possession, leading to the restoration of discretion to the courts that was intended to be reduced by the passage of Bartley-Fox.

Rossman and his colleagues also noted that after the passage of Bartley-Fox, convictions on carrying charges declined for those charged, indicating that judges and juries were less willing to convict on such charges, perhaps another type of evasion of the intent of Bartley-Fox. Indeed, the investigators conclude (very tentatively) that the Bartley-Fox amendment only led in Boston to 40 more prison sentences over a year's period for carrying charges than would have been expected.<sup>15</sup>

The major importance of the Rossman *et al.* study was to show that longer term effects may be different than short-run effects. It apparently takes time for a complex, loosely coupled system such as the criminal justice system to absorb and assimilate a change such as that represented by the Bartley-Fox Amendment. Initial responses may not be the same as long-term responses; indeed, the studies reviewed are hardly very long-term, extending only two years after enactment. Whether the trends seen by Rossman and his colleagues toward a re-establishment of the status quo ante continued or reversed in subsequent years is of course completely open.

(3) Time Series Analyses of the Bartley-Fox Amendment's Effects on Relevant Crime Rates (Deutsch and Alt, 1977; Pierce and Bowers, 1979).<sup>16</sup> Because crime statistics are collected and available on a fairly fine-grained time scale, it is possible to examine the effects of identified changes in the criminal justice system on crime rates in general and on specific types of crimes. The general logic of proceeding is clear and simple even if the specific procedures to be employed are complicated and demanding. The general principle that underlies time series

analyses is that it is possible to estimate the behavior of a time series at a particular point in time through an analysis of trends in the data at previous points in time, a principle that asserts that abrupt and dramatic changes are unlikely; the best way to predict how many crimes there will be in a given month is to analyze how long-term trends, seasonal trends plus variability of an unstructured sort would lead one to predict a particular set of values for the month in question.

Deutsch and Alt in an early article applied sophisticated time series modelling to investigating the effects of Bartley-Fox on gun assaults, homicides and armed robbery for the city of Boston for the six month period following the implementation of Bartley-Fox. Using the estimation techniques of Box and Jenkins (1970), the investigators fitted an estimation formula to the monthly time series (1966 through 1974) for the three types of crimes, projected the series forward and compared their estimates of what was to be expected with the rates of actual occurrence in each of the six months following implementation of Bartley-Fox. Deutsch and Alt conclude that the Bartley-Fox Amendment affected crime rates for armed robbery and gun assaults but not for homicide.

It should be noted that these findings apply only to the city of Boston and only to the six months following the implementation of the law, and assume that the Box-Jenkins model fitted was the best one among those available. This last qualification again emphasizes that theoretical models are critically important in assessing effectiveness.

In an article critical of Deutsch and Alt, Hay and McCleary (1979) dispute whether the time series model used was appropriate. Asserting that another model was more appropriate, Hay and McCleary show that the use of their "better" model led to inconclusive findings in which the differences between predicted and actual crime rates for gun assault and armed robbery were not statistically significant. In a rejoining article, Deutsch (1979) disputes the criticisms of Hay and McCleary and asserts that the original Box-Jenkins ARIMA model chosen was appropriate. Since we are not in a position to judge these claims and counter-claims, the best we can do is to point to the clear implication that time series analyses are not the applications of some predetermined procedure but require the judicious selection among a variety of alternatives; a decision based on artful diagnoses of empirical data as well as matching models with theoretical understandings.

A much more extensive attempt to assess the effects of Bartley-Fox is represented by the work of Pierce and Bowers (1979). These investigators enlarged the data considered to include a longer period of time after Bartley-Fox implementation, compared the trends in Massachusetts and Boston with other states and communities, and considered trends outside Boston as well as Boston itself. Indeed, Pierce and Bowers achieve a more convincing analysis of Bartley-Fox impacts because the several data bases used strengthen each other considerably.

Trends for Massachusetts are compared with crime trends in nearby states, for the New England area as a whole and for the North-

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east region. In addition, trends in urbanized counties abutting on Massachusetts are compared with Boston and the state as a whole. Pierce and Bowers find that the incidence of gun assaults was deflected downward by the introduction of Bartley-Fox, with a compensatory increase in assaults in which guns were not used. Apparently, Bartley-Fox had both a deterrent and a displacement effect. As for armed robberies, a moderate deterrent effect was detected with a possibility that guns were again beginning to be used two years after Bartley-Fox went into effect, particularly against victims in certain types of robberies. Finally gun homicides showed a slight decline, as a consequence of Bartley-Fox.

Note that it is not at all clear how the Bartley-Fox Amendment achieved these effects on the major gun crimes. The Amendment speaks directly to only one offense, namely carrying of an unlicensed firearm. It does not increase, decrease or otherwise alter penalties for crimes in which guns are used. Bartley-Fox certainly increases the risk of carrying an unlicensed weapon, but evidence from the process studies does not seem to indicate that the police and the courts changed in their arresting or charge processing behaviors to a great extent, especially after the initial post-implementation period had passed. If there is a deterrence effect, it is that Bartley-Fox deterred persons from carrying unlicensed weapons, a side-effect of which was to reduce the usage of guns in connection with certain crimes. Of course, there is always the possibility that the Bartley-Fox Amendment was only imperfectly understood by the public as generally increasing the severity with which gun-related offenses would be

treated by the police and the courts.<sup>17</sup>

In any event, it seems clear that the impact of such changes in the law have to be studied in considerable detail, both in their impacts on the criminal justice system and in their impacts on the commission of crimes. We see from the studies reviewed that the system may react initially differently from its long-run accommodation to the law. Crime rates may also be affected, but displacement effects and deterrent effects lead to a mixed set of outcomes. Perhaps it would be best if all assaults involved non-firearms weapons, but that is not totally obvious given that victims threatened with less deadly weapons might resist more vigorously and thus bring more harm to themselves.

(4) The Washington DC and Detroit Laws (Jones, 1981; Loftin and McDowell, 1981).

Two very recent studies, each focussed on a widely publicized legislative change, also bear review in this section: the first, a study of the effects of Washington DC's "Firearms Control Regulations Act of 1975" (Jones, 1981), sometimes said to be the "toughest" gun law in the nation; and the second, a study of the impact of Detroit's recent (1976) mandatory sentencing law undertaken by Loftin and McDowell (1981).

Jones' (1981) paper is the latest in a series of rather embittered disputes over the effectiveness of Washington's new (as of 1976) gun laws, the provisions of which were described briefly in Chapter 14. The first widely publicized evaluation was one sponsored by the United States Conference of Mayors (1980), which concluded that the new laws

had successfully reduced both firearms crime in general, and handgun crime in particular, within the District. This study was immediately faulted on various methodological grounds, including the inappropriateness of the comparison jurisdictions and the failure of the evaluation model to take into account possible cyclical effects in the crime rate, both well-taken criticisms.

The passage of the 1975 Act illustrates the "timing" problem discussed earlier in this chapter. The Act was passed at a time when rates of violent crime had achieved all-time highs all over the nation (i.e., in the 1974-1975 era). In the years since, rates of violent crime have tended to decrease somewhat (an effect which many suspect is due to the changing age structure of the population and, in particular, to the passage of the post-war "baby boom" out of the years in the life cycle when criminality is at its highest peak, the 16-24 year old category). The simple before-after comparison for legislation enacted in the peak years would, as a consequence, almost necessarily indicate some positive crime-reductive effects for the legislation in question. This is the essence of the criticism that the U.S. Conference of Mayors' study was insensitive to the "cyclical" nature of the crime rate.

Jones' (1981) paper presents before-after (1974-1976, and 1977-1979) data on "firearms incidents as a percentage of total incidents" for the United States as a whole, for Washington DC, for nine other major American cities, and for eight Maryland and Virginia jurisdictions that are in the immediate area of the District (see his Table 1). The entries for the District show definite declines for both robbery and

aggravated assault, but the entries elsewhere in the table also show (approximately similar) declines in most other jurisdictions as well. Indeed, over the 38 entries in the table (19 jurisdictions times two crime rate indicators), 29 are negative in sign (that is, indicate declines in the proportion of either robberies or aggravated assaults that were committed with firearms). The declines in the District, while certainly present in the data, are on the whole neither more nor less substantial than the declines (over the same period) registered in most other cities for which data are presented.

A second tabulation in the Jones article compares handgun homicides in Washington DC and Baltimore -- which, owing to its proximity, is perhaps the "most appropriate" comparison city. Both cities show a marked decline in handgun homicides between 1974 and 1978, but the Baltimore decline is clearly the more pronounced. Between the two years, the number of handgun homicides in Baltimore declined by 46% (from 193 to 104), while the number in the District declined by 36% (from 174 to 112). There were, however, some differences between the cities in the kinds of homicides that declined. In Washington, for example, within-family homicides did show a small percentage decline, whereas in Baltimore, within-family homicides increased. In contrast, crime-related murders increased in Washington, but declined in Baltimore, over the same period. It is thus possible that the 1975 Act in the District had some effect on the mix of crime types, but, in general, not on the overall number.

In conclusion, it can be said, fairly, that none of the published evaluations of the Washington law show an unambiguous crime-reductive

effect. That violent crime decreased in the District (and elsewhere in the nation) after the passage of the Act is clear in all data sources, but no persuasive evidence has yet been produced that this reduction was in any sense a result of the new legislative measure.

The Loftin-McDowell evaluation of the 1976 Detroit mandatory sentencing law is interesting in that it combines elements of both process studies and impact assessment studies. The nature of the law was to provide a mandatory two-year add-on (or sentence enhancement) for felonies committed while in possession of a firearm; similar in many respects to other sentencing-enhancement policies, the general idea is that a felony committed with a gun results in some sentence for the felony and a mandatory add-on penalty for having used (or in this case possessed) a gun in the process. The "process" question concerns how the mandatory add-on was implemented in the courts; the "impact" question is whether the add-on sentence provision had a detectable crime-reductive effect.

To examine the first question, Loftin and McDowell analyzed sentencing data from the Detroit Recorder's Court for three years (1976 through 1978) spanning the enactment of the new law (N = 8414 murder, armed robbery or assault charges). These data suggest no observable change in sentencing practices for firearms homicides or armed robberies, but some increase in the sentences for firearms assaults. The courts, apparently, were selective in applying the provisions of the new law. The interpretation given to this pattern is of some interest. Prior to enactment, typical offenses for assault were relatively low, and many cases were given suspended sentences or probation. Failing to add the mandatory two years would thus be highly visible in a typical

assault case. In contrast, average pre-enactment sentences for homicide and robbery were rather "stiff," and thus, "the sentencing judge could simply shave a couple of years off the murder or robbery sentence, making the net sentence the same as it had always been" (1981: 156). This is an interesting comment because it illustrates the subtle ways in which the criminal justice system modifies initial legislative intent through discretionary implementation of new measures, and thus, confirms once again the need for intelligent and sensitive implementation studies as a precondition for impact assessment.

Assessing the impact of the Detroit law confronts the same "timing" problem discussed above in the case of the DC Act: the law was enacted when crime rates everywhere had reached all-time highs. Following the general pattern, rates for most violent crimes did decrease in Detroit subsequent to passage of the new law, sometimes quite dramatically, but the data suggest "several patterns that are inconsistent with the hypothesis that the gun law contributed to the decline" (1981: 159). First of all, all the declines began several months before the law went into effect. Armed robbery declined sharply in the post-enactment period, but so did unarmed robbery. "For assaults the patterns are quite contrary to what would be expected if the gun law had a deterrent effect" (1981: 160). More refined statistical analyses confirm the conclusions derived from simple visual inspection of the data, "that the gun law did not significantly alter the number or type of violent offenses committed in Detroit" (1981: 162).

IV. On The Effectiveness of Gun Control Legislation:

The research reviewed in this chapter leads to no strong or certain conclusions concerning the ability of gun control legislation to affect changes in the criminal justice system or in rates of crime associated with the use of guns. In large part, the ambiguous character of the evidence has as its roots a lack of basic knowledge concerning the connections between crime and gun usage, on the distribution system through which guns are circulated, and on the ways in which criminal justice systems of this country operate.

The basic defects in gun control legislation stem from a lack of understanding about how the legislation is expected to impact upon enforcing agencies and upon persons who might commit crimes. Licensing of gun dealers and regulating imports (as in the 1968 Gun Control Act) without too much thought given to how to implement the law effectively simply leads to adjustments in the gun distribution system that restore the status quo ante. Gun control legislation that reduces judicial discretion may increase the use of discretion at other points in the criminal justice system. And so on. Note that this paragraph is not an endorsement of more effective gun control legislation; it simply means that if effective legislation along these lines is desired, then some considerable thought ought to be given to what are the most important points at which legislative control ought to be applied.

Similarly, gauging the effectiveness of legislation also demands considerable thought in constructing the appropriate ceteris paribus conditions. Cross-sectional studies of "natural" variations across

political jurisdictions appear to be an approach that needs to be postponed until the time when more is understood about how crime rates within jurisdictions are generated. Before- and after-studies are not as severely restricted but have problems of their own, as the efforts to estimate the impact of the Massachusetts Bartley-Fox Amendment indicate.

The conclusions we come to are as follows:

- First, any effort to estimate the effects of gun control legislation needs to be based on a thorough understanding of the phenomena intended to be affected and the institutional systems involved.
- Secondly, while there is some evidence that the Massachusetts Bartley-Fox Amendment achieved at least an initial impact on gun-related crime, there are considerable hints that long-range effects are not to be expected or will be considerably reduced in magnitude. In other words, there is some evidence that under some conditions, reductions in gun-related crimes can be achieved through gun control legislation, but this outcome will be neither very common nor especially pronounced.

Notes

1. The fact that this proposal would be unacceptable on many grounds is not the issue of concern at the moment.
2. The issue of how many murders start out as aggravated assaults and are transformed into murders by the availability of guns on the scene is also relevant; see Chapter Eleven.
3. More detailed and technical analyses of these problems can be found in the standard works on the evaluation of social programs, e.g., Rossi, Freeman and Wright, 1979; Cook and Campbell, 1979; Cronbach et al., 1980.
4. The extent to which such local variations exist may be seen in the results of the Policy Department Survey and in the survey of gun control regulations contained in Chapter 14.
5. Other types of variation present even greater temptations which most social scientists at least have resisted trying to analyze. Countries vary even more markedly in the restrictions placed on weapon possession, ranging from Switzerland (which virtually requires each adult Swiss male national to possess a weapon and ammunition as part of his service to the national militia) to England and Ireland (where ownership of handguns is virtually forbidden and severe controls are placed on the ownership of long guns). Some appreciation of the international variation in gun control can be attained from King (1973) as well as General Accounting Office

- (1978). Neither study attempts to draw any conclusions from the cross-national comparisons presented except to note that crime rates and the restrictive or permissive nature of gun control cross-nationally seems to be scarcely related. On the problems of international comparisons, see also Bruce-Biggs (1976) and Chapter Seven, above.
6. Earlier studies conducted by Krug (1967, 1968a, 1968b) purported to show no relationship between gun control legislation and crime rates. But since states were grouped into very large categories and socio-economic and other relevant characteristics were not held constant, Krug's results have generally been heavily discounted in discussion of gun control legislative effects. Krug's studies received widespread publicity (they were published in the Congressional Record) and Geisel's research must be regarded as partly a response to Krug's analyses.

Another study (Seitz, 1972) may also be cited. Seitz attempted to model the effects of gun control on the availability of weapons across states, and its subsequent effect on homicide rates. This study also suffers from insufficient attention to the processes that produce interstate variations in crime rates of all sorts. Among the least sensible statistics produced in this article is a correlation computed between the total homicide rate the gun-homicide rate, a computation that inflates the correlation coefficient perforce since gun-related homicide is included in all homicides, part-whole correlations generally being tautologically high (see Chapter 11).

7. Criticisms were raised by Jones (1980) that data were incorrectly transcribed by Murray from Bakal's state law inventory. Specifically, the state of South Carolina was described by Murray as a strict control state while Bakal shows that the laws in question had been repealed and that South Carolina was no longer a strict gun control state by 1970.
8. This statement does not imply that we accept the notion that there is a regional culture (see Chapter Six). All we mean to imply is that Murray's formulation implies that there is not. This and other features of the implicit theoretical structure underlying Murray's procedures are not clearly set out by him.
9. Two states, Hawaii and Alaska are ordinarily simply left out of the Harris and Gallup samples since each would be allocated only a very small number of very expensive interviews. However, these two states are somehow allocated out to regions in Murray's analysis.
10. On the other hand, the fact that alternative specifications of the underlying conditions which cause crime lead to entirely opposite research findings means certainly that the effects of state-level weapons control legislation are not sufficiently large to overpower specification errors. This implies that if state-by-state legislative variation has any effects at all on state-by-state variation in gun crime and gun violence, then the effect can only be subtle at best. Assuming accurate measurement of the legislative variability, a truly powerful effect would be detectable in either Murray's or Geisel's data.

11. Thus, the Gun Control Act of 1968 is a classic example of a problem well-known in the evaluation literature. The Act is not a simple measure with a single intended outcome, but rather a large number of distinct measures, each with a different end purpose in mind. Evaluating "the" effect of the 1968 Gun Control Act as a whole would obviously be a very difficult business.
12. Some wide differences between Census and ATF import statistics make it ambiguous whether the trend toward lowering of imports continued through the end of 1975; see also Chapters 2 - 5, above.
13. The publicity preceding the enforcement of the Bartley-Fox Amendment stressed possession as well as carrying, a theme that was not in fact true about the legislative change. Persons could still possess unlicensed weapons in their homes and places of business without violating the law, a provision of the law that was contradicted by its publicity.
14. This is a Massachusetts device for achieving a "conviction" without creating a felony record for the accused. If the accused comes before the court again on a felony charge, the unfiled case is then activated and a sentence imposed. This device is used frequently for first offenders and for persons who appear to the judge to be "ordinary" law-abiding citizens.
15. The calculated number is based on a number of precarious assumptions and hence can only be regarded as providing some evidence that the number of convictions that could be attributed to Bartley-Fox

was not large, over and beyond what would have been expected otherwise.

16. Other studies using time series for the study of gun control effects include Deiner and Crandall (1979), who studied the effects of a general crime control act that included gun control on crime rates in Jamaica. The models used, however, are much more primitive than those in the studies reviewed here and cover a shorter period of time before and after the intervention.
17. Indeed, both Beha (1977) and Rossman et al. (1979) indicate that the major publicity campaign preceding implementation was quite misleading in claiming that weapons possession was also covered by the law.

PART IV:  
AN AGENDA FOR RESEARCH ON WEAPONS, CRIME  
AND VIOLENCE

CHAPTER SIXTEEN

AN AGENDA FOR RESEARCH ON FIREARMS AND CRIME

I. Introduction

The connections between firearms and crimes form a series of topics that are scarcely neutral; partisanship runs through the avowedly polemical literature that appears in journals of opinion and is strongly present in the literature that purports to be scholarly and empirically based. There is likely nothing that additional research can furnish which would dampen the rancour that permeates the field. Nor should it, for the controversies are fueled by differences in life styles, political philosophies, theories of crime, and so on; research findings are not likely to change such passions. The best one can expect from additional research is to take some aspect of the problems in question out of the realm of controversy, perhaps forcing all participants to come more closely to grips with how things actually are rather than rely on artful constructions of empirical realities.

The research agenda described in this chapter is designed to narrow the wide band of misinformation and simple lack of empirical knowledge that surrounds the major issues involved in firearms and crime. The proposed researches are intended to provide more empirically based detailed knowledge about the connections between firearms and the commission of crimes. The specific projects fit together rather closely and are designed to constitute a program, the fulfillment of which will considerably enrich our understanding of private ownership of firearms in the United States, how firearms are distributed

and used by persons in the commission of crimes and on how public policy may be modified for the purpose of reducing the use of firearms in crime. It should be noted that this goal for public policy is endorsed by all parties in the public debate over firearms policies; what is at issue is whether the regulation of firearms ownership and possession will accomplish that end or whether public policy might be more effectively directed toward the end by the use of some other instrumentality, perhaps through raising the statutory penalties for using firearms in the commission of crimes.

The research program recommended in this chapter is addressed to two broad topics: First of all, we recommend that a set of researches be undertaken on how firearms are distributed and circulated within the private sector consisting of households and individuals, with special attention to be given to how persons accused and/or convicted of crimes involving weapons obtain them. Firm, empirically based knowledge along these lines may point out ways in which reasonable, enforceable and equitable public policies might be able to lower the possession of firearms by criminals and the use of firearms in the commission of crimes. Secondly, we propose a program designed to increase our theoretical and empirical understanding of why firearms are used in the commission of crimes and how public policy may change such usage by restructuring the balances of costs and benefits (widely construed) that are associated with such use. In this connection, we recommend both model construction and theoretical clarification as well as empirical study of decisions to employ weapons in the commission of crimes.

In addition, we propose research directly on the effects of public policy, especially evaluations of the impacts of state and local legislation directed at controlling the ownership, possession and use of firearms, as well as the mutual effects of firearms ownership and crime rates.

These broad topics are further subdivided into specific research projects. As part of the attempt to understand how the private stock of weapons is acquired, used and disposed of, we recommend: 1) A national household survey designed to provide a valid and accurate description of the current stock of firearms held by individuals and households, with special attention to weapons owned and used by segments of the US population especially likely to use firearms illegally; 2) Special surveys of persons arrested, charged or convicted of crimes involving the use of firearms with special focus on how the firearms in question were obtained and disposed of; 3) Firearms circulation studies in which the household survey plus industry data, data on imports, transfers of weapons from public sector stocks, and so on, are melded together to form an understanding of how firearms are added to the privately held stock, circulated among households and individuals and finally disposed of in various ways.

To increase our basic understanding of the use of firearms in the commission of crime, we recommend two related projects: 1) A re-conceptualization of police crime data schemes that will provide more specific information on the nature and frequency of the use of weapons in crime; 2) The development of models (oriented to the classification scheme resulting from the first project) of firearms

use in crime. We suggest that micro-economic models of the decision to engage in crime be expanded to include the decision to use or not to use firearms. Here our main concern is with understanding the anticipated benefits and costs associated with such usage.

Finally, anticipating that additional legislative actions will be undertaken regulating in some way the possession, use, manufacture or distribution of firearms or changing penalties associated with the criminal use of firearms, several alternative strategies are described for appropriate monitoring of the implementation of such laws and assessing their effects on gun-related crimes.

The research efforts are described in relatively general terms in the sections which follow. Researchers and research organizations should be encouraged to exercise their creativity and ingenuity in the design of specific proposals. Nor have cost estimates been attached to any of the proposed areas of research. Rather, it is contemplated that there are several levels of funding that would be appropriate to each area, lesser amounts, of course, being accompanied by narrower scopes.

## II. Describing and Understanding the Circulation of Firearms Privately Held in the United States

As earlier chapters of this report have amply documented, there is considerable ambiguity about how firearms flow into and are circulated among the households and individuals of the United States.<sup>1</sup>

The few existing national surveys provide some crude information on

the total privately held stock; handguns are sometimes differentiated from long guns, and the surveys provide some data on the characteristics of gun possessing households. The best survey yet conducted (Lizotte and Bordua) provides good information on the purposes for which guns are held privately, but only for the state of Illinois.

None of the surveys provide much information on how firearms are acquired and disposed of. The flow of guns into the privately held stock from registered dealers is known (at least in principle), but how much circulation takes the form of sales and barter among individuals is largely unaddressed. Nor are such important issues as how firearms are withdrawn from the privately held stock by destruction, loss, and the like, addressed by existing survey data.

The policy relevance of such information as we propose to be gathered in the two research projects recommended below should be fairly obvious. The worth and effectiveness of any attempts to prevent the use of firearms in crime by regulating the circulation of firearms is clearly conditioned by how these processes are structured, including the possibilities for substitute processes compensating for those affected by potential regulations. As usual in all decisions, the relative sizes of anticipated Type I and Type II errors and their impact are at issue: A suggested policy may have great promise for preventing potential criminals from possessing guns (minimizing false positive or Type I errors), but at the same time preventing many others from possessing guns (maximizing Type II errors or false negatives). Obviously, the most desirable policy alternative would be one that prevented only criminals from possessing weapons and allowed

all others as much access as they wanted. Of course, given the clear difficulty of identifying criminals or "crime-prone" persons, it is not likely that any policy will come anywhere near approximating this optimum condition. Indeed, it appears likely that there may be no reasonable policy that will minimize both types of errors.

Of special policy relevance is firm empirical evidence on how criminals who use guns obtain them. There is some anecdotal evidence that firearms used in robberies are obtained specially for that purpose<sup>2</sup> and immediately disposed of. A small scale interview study conducted by Burr (1977) provides some additional evidence. But neither anecdotes nor existing research provide information that is firm enough to indicate whether or not the same or different routes to obtain firearms are used by criminals as compared to other civilians. Firm knowledge about the ways in which firearms are circulating to criminals is critical to weapons public policy. As indicated below, we propose to attain this knowledge in two ways: first by oversampling portions of the civilian population that are especially prone to crime (e.g., young males from poverty households), and by directly interviewing persons who are known to have committed crimes using firearms.

Note that the two studies outlined below are closely interrelated; knowledge about how criminals obtained their weapons without corresponding knowledge about how weapons are ordinarily obtained is not fully interpretable into policy terms. A circulation process used by criminals may also be used by civilians, and an interdiction on that process may deprive more civilians than criminals of access to firearms.

The three research projects recommended are as follows:

A. National Household Survey of How Firearms Are Acquired and Disposed of

We recommend that the National Institute of Justice fund a large scale national household survey centering around the following topics (listed in order of priority):

- A. An Inventory of Household and Individual Possession and Ownership of Firearms, including firearm type, age, condition, and purchase cost.
- B. Acquisition and Disposition of Firearms: Sources from which existing firearms stock was acquired (e.g., firearms dealer, general department store, friends, pawnshops, etc.) and how firearms in the past were disposed of.
- C. Usage of Firearms and Frequencies of Use: Here we would be concerned about how often firearms acquired are used for hunting, target firing, kept on person for protection, and so on.
- D. Handling and Storage of Firearms: Where kept? Ever carried? How often maintained? Inventory of ammunition? Firearm loaded or unloaded in storage?
- E. Lifetime Experiences with Firearms: Has household always had firearms? First experiences with firearms and types of socialization (e.g., military, hunting, target shooting, etc.)
- F. Opinions on Firearms Public Policy: Here one would be concerned with developing considerably more sophisticated measures of assessments of alternative public policies than have been employed so far.
- G. Demographic and Socio-Economic Measures: Age, sex, education, income, ethnic background, etc.

Since anywhere from 40 to 50% of households will not currently own or possess any firearms, interviews with non-firearm households would only cover topics E, F, and G and hence be somewhat shorter. In order to have a sufficient case base for comparisons among different

types of firearm owners, a relatively large sample size would be efficient. Hence, we recommend an N equal to at least 5,000.

While there is obviously interest in all segments of American society, there is also special interest in those segments most likely to either be the victims of firearm crimes or the offenders. Hence, we recommend a sampling strategy that obtains more observations on such strata: Large metropolitan areas should be oversampled, along with lower socio-economic neighborhoods and especially households in which there are young adult males.

Since considerable skepticism has been frequently expressed about the validity of responses to such surveys, some preparatory technical research ought to be undertaken to test out the validity of responses of critical groups of respondents. For example, special studies ought to be undertaken in states (e.g., Massachusetts) with gun registration laws of persons on registration rolls to see the extent to which known and verified gun owners are willing to identify themselves in survey interviews.

Since it is quite conceivable that a competent and valid national survey of this sort would serve as a benchmark from which to measure trends in circulation patterns, ownership and possession, it is especially important that the survey be undertaken employing the best of talents and with technical proficiency. Hence, we recommend that sufficient time be provided for the detailed planning of the sampling design, construction and pre-testing of interview schedules and for exploratory research. Sufficient funds should be set aside for the employment of expert consultants.

Two complementary ways of obtaining information on firearms circulation ought to be explored: First of all, actual past behavior in the acquisition and disposal of firearms can be ascertained. Here the critical issue is how each presently owned firearm was acquired and how previously owned firearms were disposed of. This information has the desirable characteristic of being anchored in actual experiences, but also the undesirable characteristic of being rooted in the past and possibly representing patterns no longer current. A second approach is to ask about hypothetical prospective behavior, e.g., "If you wanted to buy a handgun, how would you go about it?", possibly generating a series of questions in which the word "buy" is replaced by the terms "borrow," "sell," "get rid of," and so on. The advantage of the second approach lies in the possibility of constructing the presently perceived circulation patterns for firearms. The disadvantages are also obvious, especially the fact that perceived patterns are not necessarily those that would be used. (No brief is being made here for the particular wording of the hypothetical question posed above, the precise wording to be used being clearly a matter to be decided by exploratory research.)

Because the recommended national survey is likely to stand as a benchmark in the measurement of future trends in firearms circulation and ownership, the grantee or contractor conducting the study needs to be selected with special care. Especially critical is proven experience in the writing of questionnaires. Hasty and superficial questions on acquisition and disposition may produce vague general replies, knowledge that may be only marginally better

than ignorance. Equally critical would be the design of the questions dealing with gun policy issues. As shown in Chapter 13, slavish imitation of past surveys will only serve to perpetuate the partial understandings we now have of where significant portions of the American electorate stand on these issues. The anticipated costs and benefits of various gun policies ought to be set out clearly so that respondents can see more clearly the anticipated consequences of their choices. Appropriate analyses of these choices undoubtedly will show that the American population can be sensitive to the nuances of public policy choice.

B. Special Studies of Transfers Into Criminal Possession

Although the national sample described above will provide good information on how guns typically are acquired by the US population and some specific detail on how crime- or victim-prone segments of the population behave in these respects, any tabulation of even the most likely crime-prone segment will largely contain persons who have never and will never commit firearms-related offenses. Nor is there any way of refining the analysis to the point where only persons highly likely to be (or have been) criminals are looked at in detail. Hence, we recommend that special studies be undertaken of persons who have been identified as having committed crimes involving the use of firearms.

Of course, guns figure in criminal charges in a variety of ways. It would be useful to distinguish among the following types of firearms-related charges.

- a. Weapons Status Crimes: Illegal possession, illegal carrying of weapons: crimes that are violations of weapons regulations.
- b. Instrumental Weapons Crimes: Crimes in which weapons are used or threatened to be used for the purpose of obtaining economic gain, e.g., armed robbery, armed burglary, etc.
- c. Essential Weapons Crimes: Crimes in which the actual use of the firearm is essential to the commission of the crime: armed assault, gun homicide, etc. The key issue here is that harm is intended and guns are essential to that intention.

The main reason for making these distinctions is that the processes by which weapons are obtained in connection with each of these types may be quite different. Furthermore, policy interest may well vary from one type to another. Weapons status crimes may be of less interest than instrumental weapons crimes or essential weapons crimes.

The main source of information about weapons used in connection with such crimes is from weapons that are detained or confiscated by the police in connection with the commission of such crimes. Indeed, the only information we have on the origins of crime-related weapons comes from a small handful of studies reviewed above in Chapter 10.

We recommend that such studies be continued and enlarged. Especially critical would be attempts to obtain information about how firearms were acquired from the persons from whom the weapons were confiscated. Especially critical would be information on prices paid for weapons as well as the kinds of descriptive characteristics of weapons, as detailed above (type, caliber, age, operating condition, etc.). Whether such information is of utmost reliability is not an overriding issue, especially in the absence of any information on how

guns are obtained to be used in criminal acts. We anticipate that the sources of weapons used in each of the crime types above will vary and that this information will provide insights into appropriate and efficient weapons interdiction policies (assuming that such policies would be desirable on other grounds).

Several strategies for the collection of data under this project are possible: First of all, at the crudest level, one may simply attempt to trace the origins and last known dealer for firearms confiscated by the police. The existing files of the BATF may be used for this purpose. Weapons may also be traced through the NCJIS system to discover whether or not they have been used in other crimes and/or reported to the police as stolen. While this information may be useful in pinpointing the crude geographical origins of such weapons, the paths taken by the weapons since leaving the hands of registered dealers or reported stolen by a previous owner may not be specific enough information to outline the market for weapons used in crimes. For example, it may be of some interest to know that weapons confiscated by the New York City police were last sold by a registered dealer in Florida, but that fact suggests that there may be many intermediary steps before the guns reached the persons from whom they were confiscated.

The remaining strategies all involve obtaining information directly from the persons charged with gun-related crimes. One way would be to approach prosecutors' offices to obtain lists of persons charged with such offenses and to interview the latter concerning how they obtained their weapons. The difficulties involved in

such an approach are fairly obvious: First of all, there is some risk to the individuals involved, especially if their cases have not yet been adjudicated, and it may not be wise to obtain such information without strong safeguards on their confidentiality, possibly requiring special exemptions from the courts or legislation. Secondly, there is considerable reason to doubt the candor and honesty of persons whose cases are still to be adjudicated.

A second, potentially more fruitful, approach would be to approach persons who had been convicted of firearms-related offenses, interviewing them either in prison, if sentenced, or in their normal abodes if judged innocent or given non-prison sentences. The experience of the Rand Corporation researchers (e.g., Greenwood, 1980; Marquis, 1981) in interviewing prisoners is an especially good precedent indicating that such an approach would yield reasonable sets of data.

We lean toward recommending that prisoners be interviewed or invited to fill out self-administered questionnaires. Although the prisoner population does not fairly represent all relevant criminals or even all persons charged with the commission of firearms-related offenses, this approach is likely to be cost effective and potentially productive of good data.

#### C. Describing the Firearms Distribution System

In order to properly understand how firearms of various types find their way into the inventory of firearms held privately, the household survey described above will be extremely useful. It will provide data on how firearms are acquired and from which sources. The survey will

also provide data on how weapons are passed on to other owners or withdrawn from circulation (destroyed, irretrievably lost, etc.). However, the privately held stock is replenished and increased by transfers from dealers, and ultimately from manufacturers or from other stocks (e.g., military weapons). To properly understand the total system of distribution of weapons, it is necessary to undertake some special studies of particularly important segments of the system, as follows:

1. Manufacturers, Importers and Exporters

An important source of new entries into the total stock of firearms in the United States is the output of manufacturers and the transactions of importers.<sup>3</sup> Since this source consists of a relatively small number of corporate entities who are monitored by Federal agencies, the obtaining of detailed data from them on numbers, types, calibers, prices, and other qualitative features of firearms in their inventories and sold by them should be possible. There is also good reason to suspect that such data are already being compiled by the firms in question for their own internal management needs and possibly as well to meet the regular data needs of the ATF and the Customs Service.

Since some of the stock manufactured in this country is exported abroad either by the manufacturers directly or through intermediaries, it may be necessary to add exporters as a source of information in order that such weapons

not be added to the domestic stock.

2. Dealers' Transactions

Since there are from 150,000 to 200,000 dealers licensed under the 1968 Gun Control Act (Zimring, 1975), collection of complete data on acquisitions and sales from such sources will likely be expensive and fraught with data quality problems. Since dealers are required to keep records of transactions and to make such records available to ATF, basic data likely exist. Because of the large numbers, it seems sensible to undertake a sampling of dealers and their transactions. Undoubtedly, as in other businesses, considerable size discrepancies exist among dealers with some small proportion of large volume dealers completing the largest proportion of transactions; hence, a sampling strategy in which dealers are sampled with probability proportionate to their business volumes would be efficient.<sup>4</sup>

As in the case of manufacturers and importers, the information on dealers' transactions should center around a few key characteristics of the firearms being handled: sources from which acquired, caliber, types, prices, and so on.

Actual data assembly procedures may take the form of requesting sampled dealers to summarize their own records, with a subsample of such summaries being checked against original raw records, or trained surveyors may be sent to

dealers to assemble data from the original raw records. Obviously, the former strategy would be considerably less expensive than the latter, although one might be more confident that the summaries resulting from the labors of specially trained personnel will likely yield data of higher quality. Whether one should adopt one or the other of the two data collection strategies described should be decided on the basis of some small scale technical research that is incorporated into the design phase of any dealer survey undertaken.

### 3. Private Transactions

As mentioned above, if the national household survey described in II above is undertaken, data on transactions between non-dealers can be obtained in connection with inventories of the household stock. If the national survey is not undertaken, there appears to be no other way in which such private transactions can be measured. Hence, special prominence is given to the household survey in this research agenda.

### 4. Transfers from Military, Police and Corporate Stocks to Household Stocks

A potentially important source of replenishment for the privately held stock of firearms is the transfer of surplus, outmoded, or inappropriate firearms from the stocks held by the military, police forces, and by corporate bodies (includ-

ing government agencies as well as corporations). Given the attention given to the police armament by firearms manufacturers, we can suspect that the turnover of police firearms may be an important (if minor) source of additions to the household stock each year.

While the military and police may be reluctant to provide information on their total firearms inventory, they may be less reluctant to provide information on this disposal of weapons, including those that are transferred into the household market. Indeed, for the military such information may be already compiled as part of maintaining firearms inventories. For police organizations, special surveys of police departments will have to be undertaken on how many confiscated weapons are returned to civilian hands, on how surplus police weapons are disposed of.<sup>5</sup>

Stocks held by corporations and government agencies (other than police and military) are almost completely unknown. Some appreciation of the size of such stocks may be obtained from dealers, manufacturers and importers which would provide some indication of flows into such stocks. If such transactions are only minimal in size, it may not be worth the considerable investment involved in devising an efficient survey strategy to measure flows out of such stocks.

The purpose of the studies outlined in this section is to round out the portrait of the gun distribution system in place in the

United States by looking at the roles played by critical organizations in the distribution of weapons. The household survey outlined earlier would provide information on what happens to firearms after leaving the hands of dealers and other organizations. But transfers among organizations that are oriented to the private citizen market need organizational data for complete understanding of the total system.

\* \* \* \*

The studies proposed in this section are intended to provide data that will fit together to afford a more general understanding of how firearms are circulated and the institutional structures that support that circulation. Of the studies outlined above, perhaps the least essential is the study of transfers from the military and police stocks, and the most essential is that of the origins of guns used in crime. It should be noted, however, that without a good understanding of how the ordinary citizen obtains weapons, an interpretation of how weapons are obtained that later figure in crime is not very interpretable. It may well be that the guns used in crimes are not obtained in any way different from those employed by ordinary citizens. Of course, without the household survey it would not be possible to make such an assessment.

### III. Basic Research on the Conceptualization of Firearms-Related Crimes

Throughout this report there were many points at which we noted the considerable need for some thoughtful and rigorous conceptualiza-

tion of the issues under discussion. At least part of the problem is a measurement one. Firearms-related crimes are not clearly distinguished as a separate category in the accounting systems lying behind crime statistics. In some criminal codes, the only firearms-related crimes that can be distinguished are those that directly contain firearms in code titles, e.g., "assault with a firearm;" in other systems, e.g., LA PROMIS, it is possible to ascertain whether or not a firearm was "present" in some way in connection with a charge, but not whether it was used in the offense involved. We propose below that some effort be expended in developing a simple-to-operate device for recording firearms information in connection with criminal justice records.

A second effort we recommend in this section is development of models concerning the use of firearms in the commission of crimes. The main thrust here should be to conceptualize the balances of costs and benefits associated with the use of weapons in crimes, a task that potentially may locate points at which such balances may be upset in a socially approved direction by the pursuit of an appropriate social policy.

#### A. Improving Data Collection on Firearms-Related Crimes

As shown in the Police Department Survey (Weber-Burdin et al., 1981), and in the analysis of the Los Angeles PROMIS data (Rossi et al., 1981), some information on weapons used in crimes and on the presence of weapons in a charge is collected routinely by many jurisdictions. The information is ordinarily neither easily retriev-

able nor very revealing when available. We believe that such data may be made more available and useful without adding appreciably to the existing response burdens of criminal justice agencies.

In part, the recommended effort consists of thinking through what information is needed and in part of devising simple data collection instruments that may be added to existing records systems. Information desired on weapons would include the following:

- 1) Whether or not firearms were "present" in connection with a charge;
- 2) Weapons description: size, caliber, manufacturer, model;
- 3) Weapons location: on person, in sight, on premises, etc.;
- 4) Whether or not weapon was "used" in connection with charge, i.e., brandished, displayed only, shot threatened, discharged, etc.;
- 5) Condition of weapon: loaded, unloaded, in apparent operating condition, inoperable, etc.;
- 6) Firearms serial number.

Most of this information is available in written arrest records and police investigative reports. Conversion to checklists and boxes for required information would be simple and require little additional training for investigating police officers. Such data or a copy thereof could be carried forward with a case to a district attorney's office and incorporated into that office's records used in the courts.

#### B. Modelling the Use of Firearms in Crime

While the use of weapons in crime appears superficially to be so transparently obvious and sensible that there may be no good reason to investigate this topic further, more thoughtful consideration leads one to assert that this topic may be of utmost importance. It is clear that policies designed to affect gun related crimes are based on models of why and how guns are used in crime, and more careful thought to such models, as well as empirical tests, may allow for the formulation of more effective policies.

First of all, while many commentators upon weapons and crime distinguish roughly between assaults, homicides and economically motivated crimes, it is not at all clear that the patterns of firearms use connected with those crimes are different. A model which states that crimes will be committed with guns if guns are accessible is often an extrapolation from the obvious truth that if there were no guns available, no crimes would be committed with them. It is also a model which implies that whether or not a weapon is used is not so much a matter of calculated costs and benefits but more a matter of convenience. A gun assault in a bar arising out of an altercation occurs only because the assailant carries a gun; a street robbery involving a gun also arises out of gun carrying. Note that this model leads to a strategy which attempts to lower the possession or carrying of guns, and is perhaps the basic view underlying the Bartley-Fox amendment in Massachusetts.

Secondly, careful attention has not been given to the anticipated costs and benefits of using weapons in crime, especially those crimes

that would appear to have more of a rational basis. Here the issue is, say, why would a burglar carry a gun? The structure of anticipated costs and benefits include considerations of the following sort: How much is the anticipated gain from the crime affected by the use of a gun? Clearly, someone who attempted to hold up an armed bank messenger is more likely to be successful using a gun than attempting strong-arm tactics. But, is a gun really necessary in order to successfully complete a burglary? How much is the risk of apprehension lowered by the carrying of a weapon? Will armed robbers be more successful at escaping from the scene of a crime than those who use strong-arm methods? Finally, does the possession of a gun and its use (or threat of use) in a crime increase the expected punishment if apprehended?

The two issues raised above cannot be settled easily. The best we can recommend at this point is that the National Institute consider funding basic research that attempts to model the commission of gun crimes. Some attention ought to be paid to the problem of differentiating among types of crime, especially those involving injuries to persons and those from which some economic gain can be reaped. Secondly, models should be constructed which attempt to conceptualize the costs and benefits to be derived from the use of weapons on a variety of types of crime.

While many attempts at micro-econometric modelling often end with model construction and perhaps fanciful extrapolation to macro-data, this is not an inherently natural end to the process of modelling. It is also possible to see the extent to which such models

accurately mirror processes of decision making actually used by persons engaging in crime. At the least, such models ought to be consistent with the findings on the use of guns as revealed in the empirical studies undertaken under I. B. above. But, even more important, the construction of interview instruments ought to be influenced by model construction. For example, a decision making model might rely heavily on shifts in the perceived probabilities of apprehension conditional on carrying or not carrying a firearm during the commission of a given category of offence, say, robberies. Such estimates of perceived probabilities may be obtained from prisoners interviewed for a variety of crimes in which the carrying of a weapon appears optional.

#### IV. Other Recommended Research Projects

The two projects listed below arise out of the literature review but are not easily subsumed under the broad topics listed above; nevertheless, they have some important policy relevance in and of themselves.

##### A. Mutual Effects of Gun Ownership and Crime

Gun ownership in the United States is claimed to be at least partially influenced by individuals' desires to protect themselves against crime. Some observers have noted that this pattern of arming may have the effect of motivating criminals to arm themselves and to carry arms while committing crimes in which weapons are not intrinsically necessary (e.g., burglary). Others claim that widespread

possession of firearms makes it easier for criminals to obtain arms through theft. On the other side, there are claims that widespread gun ownership reduces some types of crimes because criminals are not willing to risk encountering an armed potential victim; the lower burglary rates in the South are pointed to as evidence. In short, this is an issue in which the facts are in dispute as well as their implications.

To cast some definitive light from hard evidence on this issue would require data series that are virtually impossible to obtain. Ideally, one would want to have a set of time series at hand that would enable one to relate patterns of gun ownership to patterns of crime over a sufficiently long enough period of time (at least 50 time data points) to be able to model statistically a system of mutual affecting trends. To our knowledge no time series exists that would reliably document changes in the extent and distribution of gun ownership for the country as a whole or for smaller areas. But, it would be worthwhile encouraging some researchers to investigate the utility of gun licensing information in states that have had licensing laws over a sufficient period of time. Especially useful would be licensing data that can be related to smaller areas within states and are generated by a system that requires frequent renewals. Note that while licensing does not cover all firearms held, especially guns held illegally by criminals, licenses are more likely to be held by persons who acquired the weapons for defense, and hence, licensing series would best index the defensive acquisitions. Exploratory research testing the adequacy of licensing data series in the states

of Massachusetts, New Jersey and Michigan might be worth the small investment involved.

More feasible, if less definitive, are cross sectional studies which would relate crime rates for political jurisdictions to patterns of gun possession within those areas. The national household survey discussed in section I above can provide data on gun ownership. Geocoding of household locations would make it possible to attach to each household the specific crime rates of their local political jurisdictions. If no relationship is found between the heights of crime rates over some period prior to the survey and gun ownership patterns, then doubt can be cast on whether or not crime rates affect gun ownership patterns. On the other hand, some relationships would have ambiguous meaning and would require additional and more powerful research to disentangle the relationships involved.

#### B. Estimating the Effects of Gun Control Legislation

It can be anticipated that some states and some local jurisdictions will change their gun control legislation over the next decade. Indeed, at the present writing, it seems likely that the issue of whether to amend the 1968 Gun Control Act will come up in the next (1981) Congressional Session. Although the national changes do not present much of an opportunity to make definitive studies of the effects of gun control legislation on crime, those changes enacted in local jurisdictions have considerable promise.<sup>6</sup> Especially encouraging have been the excellent attempts to study the impact of the Bartley-Fox amendment in Massachusetts, as reported in Chapter 15. Accumulation of evidence of high

plausibility from several state and local attempts will begin to provide knowledge on what kinds of gun control legislation work with what kinds of jurisdictions and with effects on which types of crime.

Especially attractive in the two major studies of the Bartley-Fox amendment (Beha, 1977; Rossman, 1979; and Pierce and Bowers, 1979) was their ability to blend together careful analyses of the accommodations of the criminal justice system to the legislation with sophisticated time series and control comparison analyses. We recommend that this pattern of combined research be continued in any additional studies that are undertaken of any new gun control legislation. We recommend, in addition, sample surveys of households to obtain better understanding of how such legislation is understood by the general population and especially gun owners. Shifts in such popular understanding over time are especially important to understand; initial reactions may be less informed and sophisticated than later reactions that are more influenced by actual experiences.

#### V. Conclusions

This chapter has set forth an agenda on what we consider to be the more important research topics connected with the issues surrounding weapons and crime. We believe that the clearest suggestions set forth (but not necessarily the least expensive) are the national household survey and the survey of offenders described in Section I. These will provide the most information useful for a wide variety of areas and are easiest to accomplish, since the techniques involved are well known

and well tested.

We also believe that the conceptualization described in Section II is also important to most, if not all, of the topics discussed.

Of lesser importance are the suggestions made for studies of the weapons distribution system on the effects of gun control legislation on crime, and the mutual effects of gun ownership and crime patterns. These topics would assume a more central position if better models of the crime process were available.

FOOTNOTES

<sup>1</sup>The privately held portion of the total stock of firearms in the United States needs to be supplemented by information on the following stocks in order to arrive at an estimate of the total amount of firearms in the United States:

1. Manufacturers inventory.
2. Dealers inventory.
3. Inventory held by Federal, state and local police.
4. Inventory held by private corporate entities (businesses, private police forces, gun clubs, etc.).
5. Inventory held by military forces, including the National Guard.
6. Inventory held by Federal, state and local governments other than above.

To obtain estimates of the total stock, special surveys would have to be mounted addressed to each of these major components. While such a total stock assessment would be of some interest, it is not being discussed here.

<sup>2</sup>A few inquiries addressed to acquaintances of the two principal investigators brought to light that the current ongoing prices for "untraceable" handguns (i.e., not registered to a known person in the Western Massachusetts area) is between \$50 and \$100. One indirect source was willing to provide discount quotations for sizable purchases, e.g., 10 or more weapons.

<sup>3</sup>Although firearms may be brought in by individuals and reputedly many were brought in by military personnel returning from overseas duty, most of the firearms manufactured abroad entered the U.S. through large scale imports in recent years.

<sup>4</sup>As more knowledge accumulates about the origins of firearms used in crime, it may turn out that small volume dealers are important sources, in which case adjustments can be made in the sampling strategy to provide more information on such sources.

<sup>5</sup>Departments that require officers to furnish their own weapons or allow officers to substitute personally owned armament for department issue will present special problems for the survey contemplated above. Of course, the adaptations necessary depend heavily on how many departments fall into these special categories.

<sup>6</sup>Here the issue centers around whether it is possible to sensitively specify the ceteris paribus conditions for the evaluation of the impact of national legislation. Local and state legislative changes allow the use of comparison jurisdictions in addition to better modeling of time trends (i.e., trends for Massachusetts should not be radically different from those in nearby states). Of course, fine grained process research on the implementation of Federal changes would certainly be worthwhile even if the assessment of effectiveness may be difficult if not impossible to undertake.

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