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Point Blank Against Itself: Evidence and Inference About Guns, Crime, and Gun Control

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This essay considers the empirical foundations for some of the more important and controversial conclusions concerning guns, crime, and gun control advanced in Gary Kleck's highly influential treatise, *Point Blank*. We reveal significant flaws in his original data analyses and identify problematic linkages between his evidence and his inferences. We suggest alternative interpretations for some of Kleck's findings.

KEY WORDS: crime; deterrence; gun control; gun ownership; homicide.

1. INTRODUCTION

In the study of guns and crime, Gary Kleck's award-winning *Point Blank* (1991) has achieved a stature few other works can match. With a magisterial command of the literature and a formidable array of data, the book presents a strong intellectual challenge to those who would argue the seemingly commonsensical case that the widespread availability of guns is a critical factor behind the high rates of violent crime in the United States. The book and the arguments that animate it have become paradigmatic for scholars who adopt a critical stance toward gun control (e.g., Kopel, 1992). But its impact goes well beyond the scholarly audience, for *Point Blank* has been cited in the popular press for its demonstration of the futility of many gun-control measures (e.g., Wilson, 1994) and has informed a more polemical literature that identifies gun control as a contributing factor in criminal violence (e.g., Polsby, 1994). The book, along with the ancillary research articles that have appeared in this journal and others (e.g., Kleck and McElrath, 1991; Kleck and Patterson, 1993), holds a place of unusual importance and influence in the gun-control literature and, more broadly, in the public debate on gun control. Accordingly, a close look at its arguments and evidence is fully justified.

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Kleck sets the stage for his treatise by calling attention to the "abysmal" quality of the gun-control debate (p. xiii).[2] In his view, previous discussions have been dominated by "emotional appeals" and by "logical argumentation without factual material" (p. xiv). There is, accordingly, a pressing need for "more and better empirical information" (p. xiv). His book is explicitly intended to provide such information and, in so doing, "to make public, democratic debate on the issue of gun control a productive exercise rather than a hollow political ritual" (p. xv).

We concur with Kleck's position that the gun control debate needs grounding in the empirical evidence and set out in this paper to scrutinize the empirical foundations for some of the more important and controversial conclusions advanced by him, in *Point Blank* and elsewhere. Our focus is on the key question of the "balance sheet" of guns and crime. Kleck acknowledges the potential role of guns as a factor contributing to violent crime rates, but he counterpoises the "bad side" of guns with the "good side," calling attention to the use of guns by noncriminals to thwart and deter crime. On the basis of extensive and original analyses, he determines that the positive and negative consequences of widespread gun ownership are roughly equivalent. Specifically, he puts forward the following propositions, which serve as the central pillars supporting his overall argument.

1. Guns have important defensive and deterrent uses in the battle against crime. According to survey data, guns are used for defensive purposes about as often as for criminal ones (p. 107). In addition, criminals' knowledge of the widespread possession of guns by citizens exerts a deterrent effect on crime (pp. 131–141). Hence, restricting access to guns would involve significant social costs in the form of decreased self-defense of citizens and possibly increased violent crime (pp. 143–144).
2. There is little, if any, net effect of levels of gun ownership on overall rates of violent crime. This claim is supported by an aggregate, intercity analysis, which purports to show that the effect of the gun-ownership level in the population on crime rates is positive only in the case of a type of crime, burglary, that rarely involves guns (pp. 197–198; see also Kleck and Patterson, 1993).
3. Moreover, crime committed with guns does not involve much greater risk of homicide than any other type of violent crime, including that where the criminal possesses no weapon. An analysis of violent-incident data demonstrates, to be sure, that once a gun is used to inflict an injury, the prospect of the victim's death increases markedly

[2]Unless otherwise specified, all page citations and table references are to *Point Blank*.

(p. 182); but this increase in lethality is counterbalanced by the ability a gun gives an offender to control a criminal encounter, thus reducing victim resistance and the need to fire a gun in the first place (pp. 180–181). The net effect of the presence of a gun on homicide is therefore almost negligible (pp. 182–183; see also Kleck and McElrath, 1991).

4. Gun-control laws are generally ineffective in reducing levels of violent crime and presumably the same is true with respect to the availability of guns to those likely to use them to commit crimes. These claims are supported by further analysis of the intercity data, which indicates that gun restrictions exert no significant, broadly consistent effect on total violence rates of gun-ownership levels (p. 398; Kleck and Patterson, 1993). But one pattern does replicate a positive finding from previous research—mandatory penalties for illegal carrying reduce robbery rates (p. 402). However, gun-control laws may have perverse effects, reducing, for example, gun availability to law-abiding citizens who might use them in self-defense or causing criminals to substitute more lethal weapons (e.g., sawed-off shotguns) for banned or difficult-to-obtain ones (e.g., handguns) (p. 91).

From these propositions, Kleck concludes that "the most fundamental flaw in advocacy of gun control as violence reduction is not that gun laws could not disarm anyone but, rather, that doing so would not necessarily produce any net violence-reducing impact" (p. 429). Nevertheless, Kleck does, at the end, present a series of gun-control proposals that he regards as workable (in Chap. 11). But the tone pervading the book is one of skepticism about the role of guns in crime and the possible benefits of gun control.

Kleck's research is undeniably impressive for the range of data and methods that he employs. However, we will argue that his evidence is not adequate to the case he wishes to build. Upon close examination, the critical propositions do not always follow directly from the data reported. Further, the original evidence and analyses that are invoked in their support are seriously deficient in our view, and in one instance, his interpretation of statistical results appears grossly misleading if not simply wrong. These inadequacies do not mean that conclusions opposed to Kleck's are necessarily correct, although in one case we argue that Kleck's evidence does support a conclusion opposite to the one he draws. Rather, our analysis implies that the issues at stake remain largely unresolved. We believe that it is especially important to draw attention to these limitations of Kleck's research because the arguments and findings from *Point Blank* are likely to inform the increasingly intense public debate about gun control.

We proceed to develop our critique by examining, first, Kleck's analysis of the impact of guns on violent crime (propositions 2 and 3), where the weaknesses of evidence and analysis do the most unambiguous damage to his argument; second, his discussion of the deterrent and defensive uses of guns (proposition 1); and finally, his analysis of the impact of gun-control laws (proposition 4).

2. GENERAL LEVELS OF GUN OWNERSHIP AND RATES OF CRIMINAL VIOLENCE

Some of the most original empirical analyses developed by Kleck deal directly with the contribution of guns to the overall level of violent crime. He addresses this relationship in two distinct ways, with separate analyses on aggregate and individual levels (we deal with the latter in the next section and the former in this one). On the aggregate plane, using data for 170 cities, Kleck attempts to assess the net impact of levels of gun ownership on violent crime rates. The analysis employs multiple indicators of the gun supply and structural-equation models for the possibly reciprocal effects of the gun supply and crime rates, i.e., easy access to guns increases crime, while increased crime causes citizens to purchase more guns. [*Point Blank* presents one version of these models, estimated with LISREL, while Kleck and Patterson (1993) present another, estimated by a two-stage least-squares procedure. Our critique below is developed mainly in terms of the former, but applies also to the latter.] According to Kleck, the analysis demonstrates that "levels of general gun ownership had little apparent effect on violence rates" (p. 197), which bolsters his contention that the widespread availability of guns is not a factor in high crime rates. (Kleck notes two exceptions to the general pattern, neither of which supports the gun-control position.) However, his overall conclusion is vitiated by a series of methodological weaknesses, which involve the measurement of the gun-supply concept and the specification and identifiability of the structural-equation models. These problems render the results of the modeling procedure highly suspect at best.

The weakness in the measurement of the gun-supply concept has the most intriguing implications. Lacking a direct measure of gun ownership at the city level, Kleck selects five indicators of what is, in his model (schematically presented in our Fig. 1), a latent construct. Four of them involve guns and crime (e.g., the percentage of homicides committed with guns). In this, he is following precedents established by other researchers, such as Cook (1979, 1991). Yet the choice creates a conundrum for him, since he implies at various points in the book that there is not a strong correspondence between gun possession by law-abiding citizens and that by criminals, and his own gun-control proposals are founded on the notion that gun possession

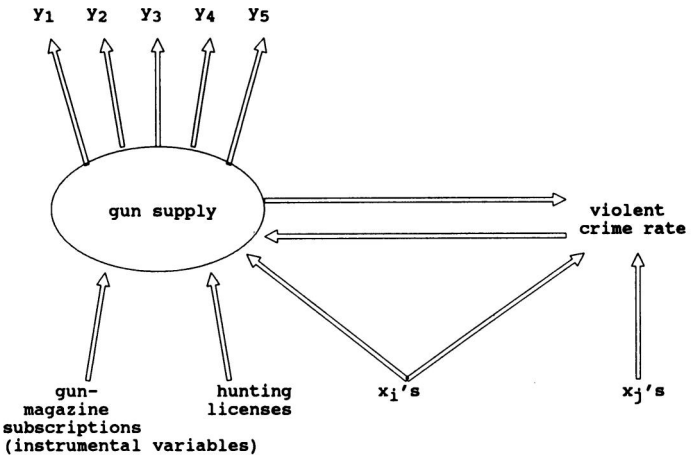

Fig. 1. A schematic model of the reciprocal relationships between the gun supply and violent crime rates (at the city level). $y_1, \ldots, y_5$ are the indicators of the gun supply; the x_i's are exogenous variables that affect both the gun supply and a particular crime rate; the x_j's affect the crime rate only.

among the "violence-prone" can be separately targeted (p. 433). In *Point Blank*, Kleck seems initially unsure whether these gun-supply indicators better reflect criminal or noncriminal possession of guns (see pp. 194–195), although he ultimately decides in favor of the broader gun-supply interpretation. Kleck and Patterson (1993, p. 263) adopt a more ambiguous stance, arguing that, although the distinction between criminal and noncriminal gun ownership must be preserved at the individual level, they cannot be empirically distinguished at the aggregate one.

The issue is not trivial. If, on the one hand, the indicators reflect primarily criminal gun possession, then they are inadequate for assessing the causal effect of crime on the level of gun ownership, one of the central motivations for the modeling procedure. This effect presumably involves the purchase of guns for defensive purposes by the general noncriminal population. If, on the other hand, the linkage between the use of guns in crime and the supply of guns in the general population is so tight that criminal gun use can be used to measure the total gun supply (this is the position that Kleck ultimately takes), then a central tenet of the case in favor of gun control is established: where guns are widely available, they are more frequently used for criminal purposes.

The validity of the models—there are five in all, one for each type of violent crime rate—is further clouded by deficiencies in their specification, for the exogenous variables shift inexplicably from one model to another. To be sure, it is appropriate for the predictors of the violent crime rate

under analysis to differ in each model. Yet the gun ownership-level construct is common throughout, but its predictors also change markedly from model to model. In fact, only two instrumental variables (discussed in the next paragraph) are employed consistently as predictors. Of the 12 other exogenous variables that are used to predict gun-ownership level, the majority (8) appears in one model only, and none appears in all five; only 1 appears in as many as three of the models (see Kleck's Table 5.14). Standardized effects as large as 0.478 (for an index of Southernness) in one model are dropped from all the other models, even though the dependent variable is the same. [The models of Kleck and Patterson (1993), while not identical to those in the book, show similar inconsistencies.] We are unable to think of any theoretical rationale that makes sense of these inconsistencies; a reasonable conclusion is that the models are not adequately specified.

Inadequate specification may mean lack of identification for all or parts of a model, and that is a definite possibility here. The identification status of Kleck's models is questionable in part because he uses statistical significance tests, rather than theory, to eliminate exogenous variables from models, the key step in establishing identification (p. 193). In addition, Kleck inserts two variables as "instruments that should have a direct effect on gun ownership but not on violence or crime rates, thereby permitting identification of the model" (p. 197). These variables are necessary because, in a never-explained feature of the modeling procedure, the other exogenous variables determining the gun supply are in each model included also in the equation for the crime rate (Table 5.14; see also our Fig. 1). Without additional, distinguishing variables in the gun-supply equation, the rank condition for identification is not met (Bollen, 1989, pp. 98–103; Long, 1983, p. 37), and the equation for the crime rate is not identified. The instruments chosen are gun-magazine subscription rates and hunting-license rates, both of which seem more attuned to gun ownership among noncriminals in small cities or rural areas than would appear to be required in a national analysis of cities (it is hard to imagine that these instruments have the posited causal connection to gun levels for cities such as New York, for example).[3] In any event, the instruments do not have the robust empirical relationship to the gun supply that their role demands, for in three of the five models they are not statistically significant (see Table 5.14); and in the others, they have small effects. A well-known principle in structural-equation modeling is that

[3]Kleck's choice of instruments may have been stimulated by Bordua and Lizotte's (1979) analysis of *all* Illinois counties, where they find that hunting permits and sporting magazines are significantly related to male gun ownership, as measured by owner identification cards. The effect of hunting permits is particularly strong (Bordua and Lizotte, 1979, p. 161). However, such an effect, which appears when rural and urban areas are included and thus compared in the same analysis, need not translate into an analysis of urban areas alone.

instrumental variables must have substantial effects; identification cannot be achieved by throwing incidental variables into a model (Duncan, 1975, p. 89). When this principle is violated, the condition of "empirical" under-identification ensues (Rindskopf, 1984). Such appears to be the case here.

One reader has pointed out to us that Kleck's models might not fail identification if the two instrumental variables are highly correlated with each other, inflating their standard errors, but together have a substantial effect on the gun supply. This possibility cannot be checked in the results Kleck reports, which do not contain a correlation or covariance matrix. We remain skeptical, nevertheless, in view of the further damaging evidence regarding the value of these instruments appearing in Kleck and Patterson (1993). The authors conduct an OLS analysis of "suicide models" using a factor which combines four of the five indicators of the gun supply. They include the two instrumental variables among the predictors of this gun-prevalence factor. This analysis is not muddled by identification issues, because it does not posit reciprocal effects. But even though there are few other significant predictors in the OLS equation, the instruments do not have significant effects, and their coefficients are very close to 0 (see Kleck and Patterson, 1993, p. 271). The case for their use as instruments, which requires that they have substantial effects on the gun supply, appears dubious.

In short, Kleck's analysis of the effect of gun ownership on city crime rates is seriously flawed by ambiguous measurement of a key construct and by severe model misspecification. These flaws appear to render moot Kleck's conclusion that the net impact of the various positive and negative effects of gun possession is "not significantly different from zero" (p. 203).

3. OFFENDER GUN USE AND THE LETHALITY OF INCIDENTS

Kleck not only rejects the hypothesis that gun prevalence is related to overall rates of crime. He also challenges the widely shared belief that the use of guns by aggressors increases the lethality of criminal incidents. Specifically, he maintains that crimes committed with guns do not involve much greater risk of homicide than other types of violent crime, including crimes where the criminal possesses no weapon. This conclusion combines two effects that are largely offsetting, according to Kleck: on the one hand, when a gun is used to inflict an injury, the likelihood of the victim's death is substantially greater than if another weapon were used, but on the other, a gun enhances the ability of an offender to control a criminal encounter, thus reducing the need to fire the weapon in the first place. The net effect of the presence of a gun on homicide is therefore almost negligible (pp. 182–183).

This is a startling conclusion which upon close examination is undermined by possible bias in the data and what we believe is a serious error in interpretation. To lay out the basis for his claim that a gun in the hands of an offender exerts a powerful pacifying influence on a criminal encounter and thereby reduces the chance of injury to the victim, Kleck performs an individual-level analysis of violent criminal incidents involving strangers as reported in the National Crime Survey (NCS) data for the period 1979–1985 (this analysis also appears in Kleck and McElrath, 1991). While the NCS is undoubtedly the best national source of data on violent criminal incidents, the possibility of selectivity bias affects the conclusion that Kleck wishes to draw here. Assaults, most of them so-called simple assaults, which by definition do not involve weapons, make up the great majority of violent incidents in these data (assaults were three-quarters of all incidents in 1985, according to Kleck's Table 2.9). A plausible hypothesis is that many of the assaults in the NCS data are reported precisely because they involve physical attacks of a non-minor kind. Verbal threats that are issued without a visible weapon and never develop into an attack, or even attacks with little injury, especially when acquaintances are involved, probably have a low likelihood of being reported in the NCS, at least by comparison with similar situations where a gun is shown by one of the participants (see Kleck's remarks on p. 175). In other words, the NCS sample of incidents is likely to be produced by unequal thresholds of recognition accorded to the threats posed by different weapon types versus no weapon at all; the no-weapon incidents that appear in the data are likely to fall toward the high end in terms of actual violence (attack and injury), compared to incidents where weapons are present. The analysis, in relative terms, thus probably overstates the nonviolent character of encounters with guns. Kleck acknowledges the possibility that such a problem is present (see p. 184), but he does no more than raise the issue. He uses, without significant qualifications, the conclusions he draws from this analysis as a linchpin to the book's overall argument (see p. 430).

We thus caution that Kleck's evidence on the harm associated with incidents involving different weapon types probably exaggerates the violence of non-gun (and especially non-weapon) incidents. Nevertheless, even if Kleck's data are taken at face value, his statistical results, when interpreted correctly, demonstrate the lethal consequences of offender use of guns quite convincingly. To establish the lethality of different weapon types or no weapon at all, Kleck continues the analysis of NCS individual violent-crime incidents, but supplemented by data on homicide from the Supplementary Homicide Reports (SHR) for 1982. It is here that Kleck appears to commit a serious error. The critical analysis is one in which homicide as an outcome is analyzed as a function of the type of weapon present, along with a series of control variables (presented in Kleck's Table 5.11), to estimate total

effects. OLS regression of a dummy dependent variable (homicide vs no homicide) is the method of analysis, so that regression coefficients can be interpreted as linear differences in the probability of the occurrence of homicide.

Finding that the regression coefficient associated with the presence of a handgun, compared to no weapons at all (the omitted category), is 0.014 (i.e., 1.4%), Kleck concludes (pp. 182–183) that "the aggressor's possession of a handgun in a violent incident apparently exerts a very slight net positive effect on the likelihood of the victim's death .... Thus, the violence-increasing and violence-suppressing effects of gun possession and use almost exactly cancel each other out. This small an association is statistically significant, however, because of the very large ($n = 14{,}922$) sample size." We believe this conclusion to be wrong. Kleck has been misled by the rarity of homicide (even as an outcome of violent crimes), as well as by the use of a statistical method inappropriate for a highly skewed dichotomous dependent variable. In our view, the coefficient expresses a very large effect: incidents where a gun is present are much more likely to end in a homicide than are incidents without weapons, just as common sense predicts.[4] They are also considerably more likely to produce a homicide than are incidents where other types of weapons, such as knives, are involved.

To appreciate the magnitude of weapon effects, it helps to have a table that Kleck does not present, namely, a table with the overall rates of homicide by weapon type. Regrettably, Kleck does not present the data in a way that makes it possible to derive these key rates precisely, but one can approximate them by combining information he does present, albeit for different years. Thus, one can derive the distribution of weapon types in violent incidents from the means for the NCS sample (1979–1985) and the NCS/SHR sample (1982), presented in the book as Table 5.7. The overall percentage of violent incidents resulting in homicide (0.36%) can be derived from the same table by multiplying the appropriate probabilities—that an incident results in an attack, that an attack results in an injury, and that an injury results in death (i.e., $0.495 \times 0.522 \times 0.014$).[5] Further, homicides can

[4]As one reviewer reminds us, an ambiguity in the language of percentages needs to be clarified here. A percentage increase can mean one of two things: an increase by a given percentage of the base amount (e.g., a 50% increase in a probability of 0.20 is therefore 0.30) or an increment added to a base percentage (e.g., 50% added to 20% equals 70%). Given the binary dependent variable in Kleck's analysis, the second meaning is warranted. If the first meaning were appropriate, then Kleck's conclusion would, in fact, be correct.

[5]Our estimate of the percentage of violent incidents resulting in homicide, derived from Kleck's Table 5.7, which is limited to stranger incidents and which combines information for different years, is very similar to the estimate for all violent incidents in the single year of 1991. In that year, the F.B.I. reported 24,703 criminal homicides (Maguire *et al.*, 1993, p. 358), while the NCS estimated a total of 6,587,000 non-homicidal violent incidents (Bastian 1993, p. 2). The ratio of homicides to the total number of violent crimes using these figures is 0.37%.

Table I. Approximate Risk of Homicide in Violent Incidents by Type of Weapon Present (Hypothetical Base of 10,000 Incidents)[a]

Weapon	Expected No. of homicides	% incidents resulting in death	No. of incidents
Gun	22.6	1.662	1,360
Knife	7.1	0.582	1,220
Other Weapon	3.9	0.287	1,360
No Weapon	2.3	0.038	6,060
TOTAL	36.0	0.360	10,000

[a]Sources: Kleck's Table 5.7 provides data on incidents by weapon type for 1979–1985; Table 5.3 shows the distribution of homicides across weapon type (excluding homicides associated with robbery and rape) for 1988. Because of the categories in the latter table, handgun and longgun incidents are combined here.

be approximately distributed among the weapon types by using 1988 data on deaths by different wound types (found in Table 5.3, which shows, for example, that 62.8% of homicides in that year were due to gunshot wounds). These different pieces of information are combined in our Table I, where we use a hypothetical base of 10,000 incidents to derive the expected number of homicides for each weapon type and, from it, a death rate.

The results are eye-opening. When a gun is present (we are unable to distinguish here between handguns and other guns, because of the categories in the table on deaths by wound types), 1.662% of violent encounters with criminals end in homicide. In comparison, only 0.038% of violent incidents without weapons end up this way. Note that, in additive terms, the difference in percentages (1.624%) is roughly the same as that in Kleck's regression (where a difference of 1.4% is found), but stated in the way we have just done, it is clear that the risks are very different. A percentage difference is not an appropriate method of comparison in this case because of the rarity of the event; ratios are preferable. Thus, when a gun is involved, the risk of homicide is 43.7 times (i.e., 1.662/0.038) its magnitude when no weapon is present—hardly a minor difference. Guns are also almost 3 times (specifically, 2.9) more lethal than knives and 6 times (5.8) more lethal than other weapons. Since the additive differences here are very similar to those Kleck obtains from his regression, it is fair to conclude that the regression equation implies effects of the same order of magnitude. The presence of guns, in short, makes incidents much more lethal than they otherwise would be. Kleck's own results demonstrate this.

To be sure, the rates we have just constructed can be regarded only as approximations to the true rates, because we have had to combine 1988 data with data from an earlier time period. Moreover, without the individual-level

data in hand, we cannot limit our estimates to incidents between strangers, as Kleck does. But we think it quite unlikely that the true rates will turn out much differently, and the fact that our approximate rates parallel so closely Kleck's regression results supports us.[6] Of course, OLS coefficients are not good measures of effects when the dependent variable is a low-frequency event. Kleck should have reported probit coefficients, as he did for other models in this part of his analysis; even better might be logit coefficients, which can be directly converted into ratios (of odds, which closely approximate probabilities for low-frequency events).[7]

Kleck might still argue that such coefficients are not the "true" effects, because offender "lethality," the desire of the offender to inflict harm on the victim, is not controlled. In discussing his results, he claims that "the slight apparent net positive effect of guns on the death outcome would be reduced, and could easily disappear altogether, if motivation could be properly measured and controlled" (p. 183). We are skeptical that effects of this apparent order of magnitude could be made to disappear with further controls; this flies in the face of our experience with multivariate analysis [see also Cook's (1991) discussion of "instrumentality"]. In any event, counterbalancing the absence of controls for offender motivations is the bias in the sample explained above toward the more serious of the incidents without weapons.

If our reinterpretation of Kleck's findings concerning the lethality of weapon is joined with Kleck's arguments about measuring the supply of guns, the result is a powerful argument diametrically opposed to the one that Kleck intends. Kleck's corrected finding about the heightened probability of homicide in violent incidents involving guns goes beyond most previous research, such as Zimring's classic 1968 article. Moreover, as a prelude to his modeling procedure in the aggregate analysis of crime rates, he appears to establish that there is a strong ecological correlation between the level of

[6]Moreover, using data Kleck separately reports for 1985, we can confirm directly a crucial figure in Table I—namely, the percentage of crimes committed with guns that result in homicide. In Table 2.9, Kleck reports that the number of violent criminal incidents involving guns in that year was 657,119; Table 2.7 states that the number of homicides due to guns was 11,621. These data indicate that 1.74% of gun-related crimes in 1985 resulted in a death [11,621/(657,119 + 11,621)]. Note that the homicide total must be added into the denominator because the NCS, the source for the count of violent crimes with guns, does not include homicides.

For handgun crime only, data compiled by the Bureau of Justice Statistics for the 1987–1991 period imply a slightly lower homicide percentage—1.56%—based on annual averages of 10,600 homicides and 667,000 handgun crimes (Rand, 1994).

Both percentages are close to the hypothetical one in Table I and thus are consistent with the order of magnitude of the weapon-type differences discussed in the text.

[7]This approximation is clear from the definition of the odds: odds $= P/(1 - P)$. When P is very small, the denominator is close to 1.

gun ownership in the general population, as established by survey data, and the rate of gun use in crime, specifically in robbery and aggravated assault, two of his gun-supply indicators (pp. 194–195). These findings support a chain of logic that directly links the gun supply to the rate of homicide, to wit:

1. Where the level of gun ownership in the general population is high, guns frequently substitute for other weapons in the commission of crime;
2. Where guns are frequently used in crime, the rate of homicide is higher, *ceteris paribus*.

That Kleck's (corrected) finding at the incident level about the impact of gun use on homicide can be translated to an aggregate plane (as in step 2) is supported by Cook's (1987) research. He finds that the gun robbery rate of a city makes a markedly higher contribution to its homicide rate than does its non-gun robbery rate, as one would anticipate from the incident-level finding.

The centrality of these erroneous conclusions about the lethality of guns and the contributions guns make to the homicide rate for Kleck's overall argument can hardly be overstated. Kleck refers to them at various points to suggest the futility of measures aimed at reducing gun possession. For instance, he speculates at one point that, "if gun possession were reduced among aggressors in violent situations, total assault injuries would increase, the fraction of injuries resulting in death would decrease, and the total number of homicides would remain about the same" (p. 184). Presumably, such meager outcomes will hardly look desirable to most readers in light of the difficulties of achieving meaningful gun control. However, his own results demonstrate that a very different conclusion could be drawn.

4. DEFENSIVE GUN USE AND THE DETERRENT EFFECTS OF GUN OWNERSHIP

Kleck claims that the topic of the ownership and use of guns for defensive purposes has been largely ignored in past scholarship, and he maintains that this neglect has impeded the formulation of rational gun policies (pp. 101–102). In Chapter 4, he presents several empirical propositions about defensive gun use in an effort to reveal the positive side of gun ownership:

1. According to survey data, guns are used for defensive purposes about as often as for criminal ones (p. 107);
2. Civilians use guns legally to kill a large number of felons each year (p. 114);

3. Most gun owners feel safer because of gun possession (p. 120);
4. Victim resistance with a gun reduces both the likelihood that an attempted robbery or assault will be completed (p. 123) and the likelihood that the intended victim will be injured (p. 124);
5. Appreciable percentages of prisoners report in surveys that they have been discouraged from committing certain crimes at some time because of fear of encountering an armed victim (p. 133);
6. Three communities (Orlando, FL; Kansas City, MO; Kennesaw, GA) experienced decreases in crime rates following programs that publicized the private ownership of guns (pp. 134–138);
7. Many burglars report that they have avoided occupied residences because of fear of encountering an armed victim (pp. 138–139).

Several of these empirical claims have been challenged in the literature. Cook (1994, p. 374) observes that Kleck's estimate for the number of defensive use of guns exceeds that from the National Crime Survey by a factor of almost 10 times. Cook (1991, p. 55) also identifies potentially serious methodological limitations of the surveys that Kleck uses for his estimate. Methodological concerns have similarly been raised about Kleck's estimates of the frequency of civilian justifiable homicides and the killings of felons (see Sherman, 1993, p. 15). Finally, research published subsequent to *Point Blank* has reexamined the impact on crime rates of the programs drawing publicity to gun ownership in Orlando, Kansas City, and Kennesaw. These recent analyses "do not support the idea that publicity about gun ownership measurably deters criminal behavior" (McDowall *et al.*, 1991, p. 554).

Our major criticism of Kleck's discussion of deterrent gun use, however, is that even if his empirical claims are granted, his most controversial inferences do not follow directly from the evidence he cites. Kleck arrives at the following overarching conclusions about the positive side of gun ownership and the significant costs of gun control:

1. The crime-inhibiting effect of routine gun ownership may be roughly equal to any crime-generating effect (p. 143);
2. Gun-control measures applied to the general population are likely to do more harm than good because the positive deterrent effect of routine gun ownership would be decreased more than would the crime-causing effect of criminal gun ownership (pp. 144–145).

In very general terms, Kleck's set of empirical propositions lends plausibility to the claim that there is a deterrent effect of gun ownership. For example, whether defensive gun use is roughly equivalent to the criminal use of guns or about one tenth as frequent, as suggested in the NCS data,

it would seem to be frequent enough to be relevant to the criminal decision-making process for a nontrivial number of potential criminals (Wright and Rossi, 1986). The surveys with prisoners confirm this point, although the extent to which crimes are actually curtailed rather than merely displaced to more vulnerable targets is open to question (Green, 1987, p. 72). In any event, the critical issue is not whether gun ownership has *any* deterrent effect but whether such an effect is *sufficient in magnitude* to counterbalance the crime-inducing effect of guns in the hands of criminals, an effect which Kleck acknowledges. The evidence summarized above actually does not permit any clear inference about the magnitude of such a deterrent effect.[8]

An exception here might be the findings of the quasi-experimental studies on the reduction in crime following gun publicity. If the more recent re-analyses indicating null effects are disregarded, the data cited by Kleck could be interpreted as indicating a deterrent effect of gun ownership which is actually greater than any crime-inducing effect, as reflected in the decrease in crime associated with increased awareness of general levels of gun ownership. However, Kleck recognizes the ambiguities surrounding such an interpretation and proposes an alternative. He writes (p. 138),

> ... The results of the natural quasiexperiments are not cited for the narrow purpose of demonstrating the short-term deterrent effects of gun training programs or victim gun use. There is no reason to believe that citizens used the training in any significant number of real-life defensive situations, nor any solid evidence that gun ownership increased in the affected areas. Rather, the results are cited to support the argument that routine gun ownership and defensive use by civilians may have a pervasive, *ongoing* [original emphasis] impact on crime, with or without such programs or incidents. This impact is intensified and made more salient at times when criminals' awareness of potential victims' gun possession is dramatically increased, thereby offering an opportunity to detect an effect that is ordinarily invisible.

According to Kleck, then, the quasi-experiments merely support the claim that there is some (ongoing) deterrent effect associated with routine gun ownership which is strengthened and rendered more visible under circumstances of increased awareness of guns. Once again, however, the important issue is not the presence of any deterrent effect of gun ownership, but the balance sheet of the positive and negative roles of guns and the net contribu-

[8]When considering the consequences of defensive gun use, it is important to distinguish between a "thwarting effect" and a "deterrent effect." If the use of a gun by a potential victim prevents the completion of a crime, the attempted crime has been effectively thwarted. However, as Green (1987, p. 64) explains, "Deterrence refers to the prevention of crimes from occurring altogether rather than to the altering of crimes already in progress." There is no logical basis for concluding that each "thwarted crime" results in a "deterred crime," and thus the aggregate number of incidents in which guns are used defensively is not a clear indicator of the deterrent effect of defensive gun use. See Green (1987) for an extended discussion of difficulties associated with inferring deterrence from information on citizen gun ownership and use.

tion of gun ownership to social order or to criminal violence. Kleck's evidence relating specifically to defensive gun use in Chapter 4 is actually incapable of resolving this issue one way or another, and his inference about the counterbalancing of the crime-inhibiting and crime-generating effects of gun possession among prospective criminals and the general public cannot be securely grounded in this evidence.[9]

Kleck's other general inference in this section of *Point Blank*—the inference about the harmful consequences of popular gun-control policies—is susceptible to a similar criticism. Kleck writes that "*in view of this chapter's evidence* [italics added], this sort of 'blunderbuss' policy [across-the-board gun control] would facilitate victimization because legal restrictions would almost certainly be evaded more by aggressors than nonaggressors, causing a shift in gun distribution that favored the former over the latter" (p. 145). Upon close examination, Kleck's conclusion here rests upon two premises. One, he assumes that gun controls will be honored more by the law-abiding public than criminals, resulting in greater disarmament of the former than of the latter. Two, he assumes that any crime-reducing consequences of a lower supply of guns in general will be insufficient to counteract the crime-inducing effect of the shift in gun distribution in favor of aggressors, thereby increasing overall levels of victimization. The first assumption is rather compelling; persons who abide by laws in general would seem to be most likely to abide by gun laws. The second assumption, however, is very much an open question. Gun-control advocates would argue that the availability of guns can be a key factor underlying the emergence of criminal motivations in the first place—surely, some persons who use guns for criminal purposes would choose not to do so without access to guns, and this effect may be equal to, or greater than, the unknown change in the deterrent effect associated with civilian disarmament.[10] In any event, the specific evidence on defensive gun use presented in *Point Blank* does not provide a secure empirical foundation for either of Kleck's premises.

Kleck is well aware of the inherent difficulties associated with the demonstration of deterrent effects (p. 131), and he cautions at the outset that the evidence on self-defense and guns "should be regarded only as suggestive" (p. 132). In the absence of more solid evidence, however, Kleck's

[9]Kleck's intercity analysis of the effect of levels of gun ownership on crime rates discussed earlier does speak directly to this issue, but as we have seen, his results are seriously impaired by methodological deficiencies.

[10]To his credit, Kleck explicitly identifies many of the more persuasive arguments suggesting a positive effect of the gun supply on rates of violence. See, for example, Kleck and Patterson (1993, p. 250).

remarks about the implications of defensive gun use for crime-control policy are highly speculative.

5. EFFECTS OF GUN CONTROL LAWS

Kleck addresses the effectiveness of gun control more directly at a later stage in the book (in Chapter 10), as well as in Kleck and Patterson (1993). However, the already discussed deficiencies in the modeling procedures have a direct bearing on his conclusions about gun-control laws, which derive from further analysis of the 170-city data. To test the effects of these laws, Kleck (and Kleck and Patterson, 1993) adds a series of dummy variables to the models for the reciprocal effects of gun-ownership levels and violent-crime rates. Since the new variables are added to both equations (because the laws they represent may affect both gun ownership and crime), the previously noted deficiencies in the models remain in force. In particular, the problematic specification and identification of the models are unchanged, and the results should be regarded as moot.

Even so, it is worth looking at his evaluation of these results in the book and of those from similar models reported by Kleck and Patterson (1993). This evaluation is unduly negative based on the coefficients reported and given the difficulty to be anticipated in finding effects of local laws, which are undercut by the leakage of guns among jurisdictions. We are not claiming, of course, that these results constitute meaningful evidence of the positive effects of gun-control laws. The methodological defects noted above preclude such a conclusion. Rather, we suggest that Kleck could easily have interpreted these results in a more positive light.

Kleck does take note of a few instances where gun-control laws appear to reduce crime rates, but his bottom-line conclusion is that the "results generally do not support the idea that existing gun controls reduce city gun ownership or violence rates" (p. 402). He states in *Point Blank*, for example, that of 121 tests of the direct effects of gun laws on violence rates, only 10 are significant and negative, the predicted direction of the effect of gun control on violence, and that this result is no better than chance. This formulation, however, understates the relative frequency of supportive coefficients, because it includes the coefficients from the model for burglary, even though Kleck argues that burglary is "rarely committed with guns" (p. 394). If the coefficients from this model are excluded (none is significantly negative), then there are 10 supportive coefficients of 102 tests. The claim that the results are no better than one would obtain by chance also goes too far. Kleck employs, it appears, a two-tailed, 0.05 significance test. Hence, under the assumption that the null hypothesis is true, one would expect 2.5% of the tests to yield a falsely significant negative coefficient and 2.5% to yield

a falsely significant positive one. In this event, one should expect only about three significantly negative coefficients (i.e., 0.025×121), rather than 10.[11]

Kleck's assessment of the effects of gun control on gun prevalence misses equally striking results. In the book, he takes no notice of the number (14) of apparently significant, negative coefficients in the gun-ownership equations (see the summary in Kleck's Table 10.5). In the article by Kleck and Patterson (1993), the authors conclude flatly (p. 278) that "existing gun control laws do not reduce gun prevalence in U.S. cities," although their own summary table (p. 273) shows that 21 of 102 tests wholly or partly support the hypothesis that such laws do reduce gun prevalence. Even more telling is their use of a "gun law index," which combines the different gun-law variables into a single factor. When used in their models, this index does not have any effect on rates of criminal violence, which Kleck and Patterson (p. 278) duly note, concluding that "treating gun control as a single endogenous variable did not strengthen support for the gun control efficacy hypothesis." The index does, however, appear in their Table III to have large, negative effects on gun prevalence in several models, as would be predicted from the same hypothesis. These coefficients are not discussed by the authors.

6. A FINAL NOTE OF SKEPTICISM

We have argued throughout that the evidence Kleck presents in *Point Blank* is not sufficient to establish his conclusions and that they represent only one of the possible interpretations of his data. This ambiguity results partly from the methodological deficiencies and difficulties that we have detailed above. But, in our view, it also results partly from what could fairly be called an underlying "paradigm," in the Kuhnian sense (Kuhn, 1962), about the place of guns in the social order. Like any paradigm, Kleck's imparts a degree of structure to the raw data, the relevant parts of the observable world, and thus gives his argument overall coherence, but some data and alternative interpretations remain out of its reach. In other words, it has "blind spots." To be fair, all social science operates with paradigms and thus is vulnerable to their blind spots, and total objectivity may be

[11]We recognize that one can test the possibility that 10 seemingly significant outcomes are significantly better than one would expect by chance or, perhaps even more appropriately, apply a multiple comparison methodology in this situation (Toothaker, 1993). We do not pursue these possibilities here because the results obtained by Kleck and by Kleck and Patterson are problematic because of the flaws in their modeling procedures.

unattainable in any area of inquiry, no less one as highly charged as gun control.[12]

Kleck's paradigm seems most clearly visible to us in his statements about the positive contribution of guns to maintaining an orderly society. The crime-inhibiting role of guns receives so much emphasis in his hands that he is led to conclude, at one point, that "much of the social order in America may depend on the fact that millions of people are armed and dangerous to each other" (p. 143). In his view, the deterrent effects of gun ownership are virtually universal, enjoyed by both gun owner and non-owner alike. This casts those who do not own guns in the role of free riders, enjoying benefits for which they do not have to pay ["whereas owners bear the costs of gun ownership, their unarmed neighbors share in any deterrent benefits" (p. 104)].

This is one side of the coin. But there is another side that gets less notice in the book, although it is equally plausible given the same evidence. It turns on the possibility that criminals would have less reason to arm themselves if gun ownership were less widespread in the general population (see Green, 1987, p. 71). Supportive evidence comes from a survey of imprisoned criminals (Wright and Rossi, 1986), on which Kleck relies quite heavily to demonstrate deterrence: it shows that criminals acquire guns mainly for their own self-protection, because they fear either becoming the victims of other armed criminals (pp. 46–47) or encountering armed victims in committing crimes themselves (p. 133). Either way, these data suggest that the perception of others' ownership of guns prods those who would commit crime into acquiring guns themselves. Once they possess guns, they are likely to use them in crime, with a greater likelihood of killing their victims, according to the chain of reasoning established earlier. While Kleck's discussion implies that those who are not gun owners should feel in debt to those who are for the deterrence guns create, there would appear to be as much reason for non-owners to blame non-criminal owners for contributing indirectly to the spread of gun violence. Both claims can be justified by the evidence.

We wonder, finally, about the quality of life in the kind of society where routine social order depends upon the massive armament of the citizenry. Fear is a keynote, we presume, because in a society where many are armed, others will be afraid to assert their rights in ordinary encounters with

[12]In recognition of the problem of objectivity, Kleck includes a "voluntary disclosure notice" to inform the reader that he is not a member of an advocacy group on this issue (p. vi). Following Kleck's example, we note that the first author of this paper is a member of Handgun Control. The second author is not affiliated with any advocacy group on the gun-control issue. Like Kleck, we are both committed to the principle that cogent reasoning and empirical evidence, rather than personal opinion, must guide social analysis.

strangers—to honk their horn when their car is cut off, for example—out of fear of being confronted with a gun. Kleck does speak to the role of fear of crime in leading non-criminals to acquire guns (pp. 27–32) and to the possible psychological comfort afforded individuals by gun ownership (pp. 119–120). What he does not raise as an issue, but deserves to be raised, in our view, is the psychological effect on a community's residents of the knowledge that many guns are in its homes, on its streets, and even in its schools. These are the conditions in many inner-city, minority communities in the United States, and a great deal of persuasive personal testimony (Ayers, 1994; Dugger, 1994), if not yet systematic evidence, indicates that fear is the dominant emotion inspired by the pervasiveness of guns and gun crime. Are these the conditions we should be willing to accept in a hellish bargain to obtain, if Kleck is right, some check on criminal propensities?

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