

GUNS AND SPUTTER

by James D. Wright

Someone once wrote: "Statistics are like a bikini. What they reveal is suggestive, but what they conceal is vital." The problem is demonstrated by the most recent entry in a long line of scientific research purporting to show a causal link between gun availability and homicide. Funded by the federal government and published last year in the *New England Journal of Medicine*, the study compared homicide rates in Seattle and Vancouver and suggested that a handgun ban "may reduce the rate of homicide in a community."

The nine medical doctors who published "Handgun Regulations, Crime, Assaults, and Homicide" essentially reasoned in three steps: (1) Despite many historical, social, and demographic similarities, (2) Vancouver has a markedly lower homicide rate (3) because its stricter gun regulations make guns less available. The second step in their reasoning seems indisputable. The overall homicide rate in Seattle (for the period 1980-86) was 11.3 per 100,000 population, compared with 6.9 in Vancouver. Homicide is definitely more common in Seattle. The question then becomes, Why?

The authors present a believable although not entirely accurate case to support the notion, as claimed in the third step of their reasoning, that Vancouver's handgun regulations are much more stringent. But their evidence on the difference in gun *availability* is indirect and unpersuasive; indeed, they acknowledge that direct evidence on the point does not exist. They offer two fragments of inferential data in support of the claim that guns are more available in Seattle; but for all anybody knows as a matter of empirical fact, the opposite could be true. We are therefore being asked, at the conclusion of the study, to believe that a difference in gun availability explains the difference in homicide rates when a difference in gun availability has not itself been established.

Indeed, the situation is even more troublesome. The first of the two indirect bits of evidence is a difference between the number of concealed-weapons permits issued in Seattle and the number of restricted-weapons permits issued in Vancouver. Differences between the two cities in the permit regulations render these two numbers strictly noncomparable.

The second bit of evidence is "Cook's gun prevalence index," which stands at 41 percent for Seattle but only 12 percent for Vancouver. Cook's index however, does not measure the relative prevalence of gun ownership in various cities. It measures gun misuse—it is an average of the percentage of homicides and suicides involving firearms.

In the present case, the index shows only that in homicides and suicides, firearms are more likely to be used in Seattle than in Vancouver. To take Cook's index as a measure of general firearms availability, it must be assumed that the proportional involvement of guns in homicides and suicides is directly related to their relative availability in the general population. But this is exactly what the authors are seeking to prove. To assume what one is seeking to prove, then to "prove" it on the basis of that assumption does not constitute scientific evidence for anything.

Even if we were to grant, on the basis of no compelling evidence, that guns are less common in Vancouver, we might still question what causes what. The authors attribute Seattle's higher crime rate to a higher rate of gun ownership. But it might well be argued that low crime or homicide rates

reduce the motivation for average citizens to obtain guns—in other words, that crime rates explain the variation in gun ownership, not vice versa.

In fact, it was once commonly argued that Great Britain's low rate of violent crime was a function of that nation's strict gun laws and the consequent low rate of gun ownership—until British researcher Colin Greenwood found that Great Britain had enjoyed low rates of violent crime for many decades before strict firearms controls were enacted. To invoke an ancient methodological saw, correlation is not cause.

Nor do the problems with this study end with its lack of direct data on gun ownership. The authors say Seattle and Vancouver are "similar in many ways," implying that they differ mainly in gun availability, gun-law stringency, and crime rates. This is an evident attempt to establish the *ceteris paribus* condition of a sound scientific analysis—that "all else is equal" among things being compared.

Clearly the two cities are similar in some ways, but a closer look reveals differences in ways that are relevant to their respective crime or homicide rates. The cities are closely matched in what percentage of their population is white (79 percent and 76 percent). But Seattle is about 10 percent black, while Vancouver is less than 0.5 percent. Vancouver's minority population is overwhelmingly Asian. So although the authors show that the two cities are approximately comparable on a half-dozen readily available demographic indicators, they have not shown that all potentially relevant sources of variation have been ruled out.

In fact, the differences in racial compositions of the two cities is particularly relevant in light of the study's breakdown of homicide rates according to the race of the victim. For the white majority, the homicide rates are nearly identical—6.2 per 100,000 in Seattle, 6.4 in Vancouver. The differing overall homicide rates in the two cities are therefore due entirely to vastly different rates among racial minorities. For blacks, the observed difference in homicide rate is 36.6 to 9.5 and for Hispanics 26.9 to 7.9. (Methodological complexities render the Asian comparison problematic, but it too is higher in Seattle than in Vancouver.) Racial minorities are much more likely to be the victims of homicide in Seattle than in Vancouver; the white majority is equally likely to be slain in either city.

Since the nearly 2:1 initial difference in homicide rates between the cities is due exclusively to 3:1 or 4:1 differences between minority groups, it is fair to ask why postulated difference in "gun availability" (or gun-law stringency) would matter so dramatically to minorities but not matter at all to whites. Can differential gun availability explain why blacks and Hispanics—but not whites—are so much more likely to be killed in Seattle than in Vancouver? (Studies in the United States, incidentally, do not show large or consistent racial differences in gun ownership.)

Or are other explanations more plausible? Could the disparity between Canadian and American rates of poverty among racial minorities have anything to do with it? What are the relative rates of drug or alcohol abuse? Of homelessness among each city's minority population? (The city of Seattle runs the largest shelter for homeless men west of the Mississippi.) Unemployment among young, central-city, nonwhite men in the United States usually exceeds 40 percent. What is the comparable Canadian percentage?

The crucial point is that Canada and the United States differ in many ways, as do cities and population subgroups with the two countries. Absent more detailed analysis, nearly any of these "many ways" might explain part or all of the difference in homicide rates. In gross comparisons such as those between Seattle and Vancouver, all else is *not* equal.

The authors of this study acknowledge that racial patterns in homicide result in a "complex picture." They do not acknowledge that the ensuing complexities seriously undercut the main thrust

of their argument. They also acknowledge that "socio-economic status is probably an important confounding factor in our comparison," remarking further that "blacks in Vancouver had a slightly higher mean income in 1981 than the rest of Vancouver's population." Given the evidence presented in the article, it is possible that all of the difference in homicide rates between Seattle and Vancouver results from greater poverty among Seattle's racial minorities. But the authors pay no further attention to this possibility, since "detailed information about household incomes according to race is not available for Vancouver."

The largely insurmountable methodological difficulties confronted in gross comparative studies of this sort can be illustrated with a simple example. If one were to take all U.S. counties and compare them in terms of (1) prevalence of gun ownership and (2) crime or homicide rates, one would find an astonishing pattern: Counties with more guns have less crime. Would one conclude from this evidence alone that guns actually reduce crime? Or would one insist that other variables also be taken into account? In this example, the "hidden variable" is city size: Guns are more common in small towns and rural areas, whereas crime is a big-city problem. If researchers failed to anticipate this variable, or lacked the appropriate data to examine its possible consequences, they could be very seriously misled. In the study at hand, the authors matched two cities for size but not for minority poverty rates or other hidden variables, and their results are impossible to interpret.

In the editorial "Firearm Injuries: A Call for Science" accompanying the study, two officials from the Centers for Disease Control lauded the authors for applying "scientific methods" to a problem of grave public health significance. But in attempting to draw causal conclusions from nonexperimental research, the essence of scientific method is to anticipate plausible alternative explanations for the results and try to rule them out. Absent such effort, the results may well seem scientific but are little more than polemics masquerading as serious research. That this study is but one of a number of recent efforts—all employing practically identical research designs and published in leading scientific journals—is cause for further concern.

[James D. Wright is professor of sociology at Tulane University. He has researched extensively on the relationship of firearms and crime. [He is co-author of *Armed and Considered Dangerous: A Survey of Felons and Their Firearms* and *Under the Gun: Weapons, Crime and Violence in America*, the commercially published version of the NIJ Evaluation which is J. Wright, P. Rossi, & K. Daly, *Weapons, Crime and Violence in America: A Literature Review and Research Agenda* (Washington, D.C.: Govt. Print. Off., 1981). "He authored the National Institute of Justice's studies of firearms under first the Carter administration, and then the Reagan administration. He began strongly in favor of gun control and changed his mind as a result of that research." David Kopel, *Canadian Gun Control*, 5 *TEMPLE INT'L AND COMP. L.J.* 1, 30 (1991); Kates, *GUNS, MURDERS AND THE CONSTITUTION* 4 (1990).]]