

THE POLITICS AND SCIENCE OF GUN CONTROL

An examination of current literature

BY MARK MARTINEZ
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In the wake of tragedies that ravaged and continue to ravage the American conscience, most everyone who has an opinion about the second amendment agrees that change must be enacted to prevent the loss of innocent lives by unnecessary violence. One of the stumbling blocks preventing the American public from stopping what must be stopped is not lack of initiative, but rather focus and an understanding of what must truly be done to lower the rates of gun violence and gun related deaths. When the arguments proffered are founded on mostly pathos driven rhetoric (as is the state now) the only movement in finding an ideal solution is that which causes the most extreme reactions(1,2,3).

One of the reasons as to why such important decisions are not based on empirical evidence is partly because of the Tiahart amendment of 2003 (4). Representative Todd Tiahart of Kansas passed into law the prohibition of government funding for research that may promote gun control as well as restricting the release of information related to gun related crimes to the public. The lack of funding has led to clear deficits in terms of reliable and conclusive research that could help formulate the firearm policies within the United States.

Even without direct government funding, studies on the effects of gun control do exist. In a 2013 study published in the *Journal of the American Medical Association*, researchers used ecological and statistical methods to rate and rank the fifty states in terms of how much gun violence occurred. (5) This data was then compared with the severity of gun laws within the respective states to analyze the effectiveness of current policy. What made this study unique from others that compared the effectiveness of gun control laws was that this study instead of focusing on one specific law, created an ensemble system that took into account 28 different laws. In the multiple rounds of the data analysis the laws were weighted with equal importance, and in other rounds the laws were weighted by what the Brady Center determined to be the most important.

The study used 3 models overall, each based on a form of a poisson regression, to measure the amount of gun violence within each state. A poisson regression is a type of method to analyze data; the y-axis is not just the amount of events that happened, but a random distribution that predicts the amount of weakly related or unrelated events that occur in a set amount of time. The first model took into account only age of the victims as its parameter. The second included race/ethnicity, sex, poverty, unemployment, college education, population density, and rates of nonfirearm suicides and/or nonfirearm homicides, while the third also included home gun ownership as extra variables.

The study ultimately found that “A higher number of firearm laws in a state are associated with a lower rate of firearm fatalities in the state, overall and for suicides and homicides individually.” An interesting note was that the only constant factor that decreased the amount of gun violence was background checks, while all other parameters had more subtle correlations within the states. The one drawback to the conclusions is that although there is an association with more stringent gun laws and less gun violence, they “could not determine cause-and-effect relationship”, and that “further studies are necessary to define the nature of this association.”

A 2009 study conducted by the University of Pennsylvania looked at the “relationship between being shot in an assault and possession of a gun at the time.”(6) The researchers restricted their sample size to the city of Philadelphia and because guns are mobile made assumptions such as the time of day or current location would not increase or decrease the likelihood of being shot.

After performing regression models and sensitivity tests to deal with error, the study concluded that there were on average 4.77 shootings per day, 91.8% being assaults. The results of the study showed that individuals who had guns were 4.46 times more likely to end up being shot, and those involved in assaults and had a gun were 4.23 times more likely to be

fatally shot. The study notes that “although successful defensive gun uses can and do occur, the findings of this study do not support the perception that such successes are likely.”

With similar results, in an older study published in the *American Journal of Epidemiology* in 2004, a year after the cut of government funding, the researchers used death certificate information and interviews with the kin of those killed in gun related events. (7)

In the study the scenarios of death were subdivided into four different categories. Suicide and homicide from gun related causes or other causes. Those interviewed who knew the deceased were asked if firearms were present in or around the home, the amount of guns, the type of gun, and storage practices. Using this data the researchers ran multivariable, logistic regressions to calculate the odd ratios of gun related death.

The study reported that regardless of how a gun was stored, the odds ratio to death by gun related homicide had an odds ratio of 1.9 (for every 1 survivor there were 1.9 deaths) and the odds ratio for suicide in men was 10.4.

One article did not use the statistical methods as the aforementioned studies had.

In a review of historical evidence culled from both the United States as well as Europe, the *Harvard Journal of Law and Public Health* concluded from a wealth of historical evidence that tighter gun regulation does not correlate with decreased rates of gun violence, but in certain cases indicate that the severity of restrictions may actually have no effect on the overall statistics.(8)

The review uses country specific murder and suicide information in conjunction with the stringency of a nation’s gun control laws to argue that guns in fact do not increase homicides or suicides. The article cites Russia as having near complete gun prohibitions, but also sporting a four times as high murder and suicide rate from 1990 to 2004.

While Europe is often heralded as boasting much lower violent crime rates than the United States has, the article



Solution searching: The US Administration discuss gun control policy following the shootings in Newtown, Connecticut on December 14, 2012 at Sandy Hook Elementary School, killing twenty seven total. *Image from Wikimedia Commons.*

makes note that within continental Europe in the year 2002 Luxembourg, which has a complete ban on firearms, had a nine times as high homicide rate than Germany had, where for every 100 people there are 30 firearms.

From the range of research already done, it seems that statistically it is safe to say that a surplus of guns and laissez faire gun laws do indeed increase the likelihood of gun related violence; though, none of the studies were able to conclude exactly what increased the violence. In light of the lack of true understanding of what must be done, president Obama has recently put into motion a set of 23 executive actions that address many of the concerns regarding firearms currently plaguing the United States. (9) Although some points within the executive action may be under contention, one of the more uncontested, important factors will be the repeal of the current ban on gun violence research.

With the number of studies of gun violence far and few between (notice the years of the studies), the bulk of political progress is moved by anecdotal evidence. Historical evidence provides a valid foundation for which to base scientifically rigorous studies that would better and near conclusively link true correlations between gun violence, however, historical evidence alone is insufficient to make conclusions on policy that would affect the trajectory of how the second amendment and friends are handled politically.

With the research ban seemingly lifted, the path to understanding the effects of gun ownership on the rates of gun violence will be better understood and hopefully allow the creation of more informed public policy. The research now only needs to begin.

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