

The Burden of Bad Metaphors: Putting Blinders on How We Think About Gun Violence

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ABSTRACT: There have been many calls for physicians to enter the political discourse on gun control by viewing “gun violence” as a “disease.” The medical metaphor for social problems is seductive, but has many pitfalls. Studies have shown that metaphors create significant cognitive bias regarding both the perception of the problem and can dictate the solutions that are considered. It creates an authoritarian approach to social problems that can have severe negative consequences. These problems have appeared in the use of the metaphor of “gun violence as disease.” Adherence to this metaphor has resulted in the substitution of advocacy for academic integrity and has damaged the credibility of the medical community.

KEYWORDS: Forensic pathology, Gun control, Medical metaphors, Academic integrity

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There have been many calls for physicians to enter the political discourse on gun control by viewing “gun violence” as a “disease.” Casting social issues as medical ones is seductive. It provides a context that allows structuring investigation and, one may hope, solution to the problem. More important, it automatically makes us experts. We are experts on disease. If an issue can be viewed as a disease, then we must be experts about it.

But as convenient as these metaphors are, they come at a cost. They introduce cognitive bias that can corrupt how we view the problem. They can corrupt what choices we make about solutions. Casting social issues as diseases embraces particular attitudes about society itself, views that many consider malignant and destructive. They can lead to crimes against humanity. They often simply don’t work.

Metaphors characterize one object by calling it another. “*My wife is an angel.*” “*A mighty fortress is our God.*” Metaphors serve to emphasize particular aspects of the subject, but they properly also create tension by asking the reader to consider how the subject differs from the metaphor. When my wife and I face troubles in life, she sometimes says I am her rock. I assume that she means that I am as firm and steady as a rock, not as dumb as one. If these differences are not recognized, metaphor can be mistaken for the object. When applied to people, they become stereotypes.

The Indian Nations removed to Indian Territory were “children” of the Great White Father. In religion, they become dogma. In social policy, they can be disaster. As one writer notes, this is a particular problem when viewing social problems as disease (1):

“Once a metaphor has been invoked it moulds and constrains the way in which a problem is understood, structuring perceptions and understandings of that problem and what would count as a solution to it. In this way metaphor contributes to the establishing of a hegemonic discourse—a dominant way of speaking and thinking that comes to achieve an almost unassailable self-evidence, a taken-for-grantedness that suppresses other ways of speaking about crime and punishment...”

Thibodeaux and Borditsky have performed multiple experiments that have shown that the use of metaphor can substantially change how people view possible solutions to a problem. In their experiments, they provided one group of subjects with descriptions of crime in which it was described as a predatory beast and another where it was described as a viral infection. When crime was described as a predator, respondents were more likely to believe that increased enforcement and punishment were appropriate. When it was described as a virus, they were more likely to believe social programs would be helpful (2, 3).

Interestingly, when asked what affected their choice, the respondents were completely unaware of the effect of the metaphor (3):

"...We find that metaphors can have a powerful influence over how people attempt to solve complex problems and how they gather more information to make 'well-informed' decisions. Our findings shed further light on the mechanisms through which metaphors exert their influence, by instantiating frame-consistent knowledge structures, and inviting structurally-consistent inferences. Interestingly, the influence of the metaphorical framing is covert: people do not recognize metaphors as an influential aspect in their decisions. Finally, the influence of metaphor we find is strong: different metaphorical frames created differences in opinion as big or bigger than those between Democrats and Republicans."

George Kelling provides a chilling example of a case of rape in a large city. Over a year, 11 girls were raped in Buffalo, NY. The police determined facts that could have prevented eight of those rapes, but withheld the information because their metaphor of crime-fighting caused them to ignore the protective role of police. Kelling notes (4):

"They were victims, though no one realized it at the time, not only of a rapist, but of a metaphor. ...The power of metaphor to shape public policy reaches its peak when a metaphor becomes so ingrained that it drops out of sight. In other words, metaphors gain ideological power as their literary power fades. When metaphors lose their capacity to attract attention—when they become a linguistic habit—they become dangerous: A trick of language becomes an intellectual trap."

Some writers see the medical metaphor particularly dangerous and insidious. This is particularly true regarding the "psychiatrization" of criminal behavior and the "criminalization" of psychiatric disease. As one writer notes (5):

"Of all the many correctional shibboleths religiously communicated to their students by professors of sociology, social work, criminology, and corrections, the 'medical model' has proved most durable, and strangely so since there has been little, if any, empirical demonstration of its validity. The concept is at once so humane, so modern, so professional, and seemingly so scientific as to commend it to men of good will; and the process of follow-up evaluation so neglected and so fraught with

methodological pitfalls as to permit widely disseminated claims of rehabilitative success based on little more than an overly optimistic belief in the ultimate perfectibility of even the most dangerous and recidivistic offenders coupled with a statistical innocence more appropriate to an adolescent interest in batting and fielding averages."

Thus it is for the metaphor of the "disease of gun violence." The medical model of crime is the poster child for misuse. It represents an anti-democratic view of governance. It should be remembered that the modern medical model is profoundly authoritarian, where the physician (or the third party payer) dictates therapy and the patient is supposed to be compliant. The "old" model of the patient-centered physician has given way to the new model of society-centered medicine, where the welfare of the patient can be sacrificed for the public good. While some writers have decried this progression, others have celebrated it as a practical necessity (6-8). As Michael Fitzpatrick notes in *The Tyranny of Health: Doctors and the Regulation of Lifestyle* (6):

"...Doctors may still project their desires for the redistribution of wealth to remove the social causes of health inequalities but, as the government's response confirms, its only interest is in improving social cohesion and stability. Hence doctors who take on a wider social role find themselves implementing policies which, far from offering greater liberty and democracy, have an inherently coercive character. What a bitter irony that Virchow, the great libertarian, now provides an aura of radical legitimacy for an authoritarian government health policy."

The examples of the end-stage result of encoding social and political positions as "medical" ones has haunted us throughout history. It brought us the politicization of psychiatry in the Soviet Union, where dissent from the socialist ideal was considered an illness (9). It also brought us eugenics. A lecture of the 1930s provides a logic almost identical to that of those who promote the social-issue-as-disease metaphor today (10):

"Now it is clearly a function of the medical profession to advise the politicians in the matter of planning for a healthier community. Of this there is a growing recognition. In the next decade or two, if the politicians will keep us out of wars, and, let us hope, will translate to social services and reconstruction some of the vast sums at present expended upon armaments, we may expect new gains in health and physique from nutritional reforms, including

adequate milk supplies; from healthier herds and the pasteurization of milk; from further housing improvements; and from other comparable measures now brought within the purview of state medicine. But there will still remain a more fundamental lesson for statesmen, for communities and for individuals—the lesson proclaiming the importance of pedigree and pride of pedigree and the importance of encouraging an optimum fertility rate.”

Replace that awkward bit about pedigree and fertility rate with “the disease of gun violence” and “the importance of restriction on gun ownership” and you have the editorial page of the *New England Journal of Medicine (NEJM)*. This metaphor helped bring us racial hygiene and the Holocaust, where executions were considered medical procedures (11). A recent discussion on the use of physicians in torture noted that one of the primary problems was the development of “dual loyalty” in which the loyalty of the physician to the patient and the loyalty of the physician to “society” were contradictory. Choosing “society” lead to accommodating torture (12).

The metaphor of “gun violence” starts with the assumption that “violence” is primarily (or at least most importantly) a function of “guns.” But what would happen if maybe, just maybe, that isn’t the case? Will a focus on “gun violence” find those other causes?

It will not. Multiple studies have suggested that 60-90% of the rise and fall of violent crime over the past 50 years may be due to the effects of atmospheric lead pollution, primarily due to leaded gasoline. There is a 22-year lag between rise and fall of atmospheric lead and violent crime with an R^2 correlation of approximately 85-90%. Each one percent change in atmospheric lead levels is associated with a 0.46% change in violent crime (13-16). Studies on abortion, while challenged, have suggested an inverse correlation between abortion rate and crime in both the United States and Romania (17, 18). There are a host of other issues, such as cultural heritage and family dynamics, patterns in crack cocaine usage, incarceration rates, and others (19, 20).

Does atmospheric lead really provide a causal explanation for most of the violent crime in the U.S.? Perhaps not. What is important is that a laser-like focus on “gun violence” would never lead us to look. A *Google Scholar* search in preparation for this editorial for [(“atmospheric lead” OR “leaded gasoline”) AND crime] gave 885 results. A MEDLINE search revealed zero articles on (“atmospheric lead” or “leaded gasoline”) in the *NEJM* or the *Journal of the American Medical Association*

(*JAMA*). A search for (“guns” or “firearms”) revealed 96 articles in the *NEJM* and 184 for *JAMA*.

With so much of the causal mechanism of violent crime likely not due to guns, it is not surprising that it is difficult to tease out what little remaining risk is left and blame it on these weapons. Let’s be clear. There is no large reproducible relationship between gun ownership and violent crime. This is in large part because the almost trivially small part of crime that might be caused (or prevented) by gun ownership is dwarfed by the primary causes and cures, and one is left with significance-mining at the edges. Those focusing on the “disease of gun violence” are left trying to decide whether small changes in noisy data driven by other causes might be further affected in some trivial way by gun ownership. The more that demographic and conflating variables are controlled for, the more likely the study is to find either negative or no relationship. For instance, the vast majority of those that model for two-way causation (asking if an increase in crime motivates people to buy a gun rather than assuming that owning a gun causes an increase in violent crime) fail to show a positive correlation. Instead, they tended to find that while crime rates affect gun ownership, gun ownership does not affect crime rates (21).

The degree to which significance-mining occurs in these studies is demonstrated by the response to John Lott’s “*More Guns, Less Crime*,” which indicated a negative correlation between gun ownership and violent crime (22). An oft-cited rebuttal was a study by Duggan called “*More Guns, More Crime*” that measured crime rates compared to subscription rates to the magazine *Guns&Ammo* (23). While a slight positive correlation in homicide was present when *Guns&Ammo* was used as a proxy for gun ownership, it disappeared if any of the other major gun magazines (*Handguns*, *American Handgunner*, *American Rifleman*, *North American Hunter*, or *American Hunter*) were studied (24, 25). This is not surprising, since the demographic that subscribes to *Guns&Ammo* is idiosyncratic, and in fact increased sales of *Guns&Ammo* are correlated with decreased gun sales (24). Increasing the availability of concealed carry has a better correlation with decreased violent crime (22, 24-26). As guns sales continue to rise, so-called “gun violence” continues to decrease, both in absolute numbers and as a proportion of violent crime. In spite of public perception, increasing gun sales is not associated with mass killings, which are also not on the rise.

It doesn’t matter. The problem is “gun violence,” and guns it must be. One of the most glaring examples of this bias is the repeated and uncritical

citation of Kellerman et al.'s landmark article on homicide and guns in the home. In this article, the authors conclude that a household with a gun is 2.7 times more likely to suffer homicide than one without (27). There are a number of fatal problems with this article, not the least of which is that the authors declined to ask whether or not the killing was done with the firearm that was kept at the home (later research suggests that it almost never was). The conclusion of the article was that people should be discouraged from keeping a gun at home because it will, through an unstated mechanism, cause people to break in and (among other things) strangle them.

While this article has largely been debunked in the social science literature, it is cited uncritically in the medical literature and by professional medical organizations wedded to this narrative. A casual *Web of Science* citation search in preparation of this editorial revealed 315 citations of this article, and a *Google Scholar* search revealed 515. The devastating criticisms of the paper are simply ignored by the medical literature. Another quick *Google Scholar* search suggests that one of the best critiques, published by Gary Kleck in *Homicide Studies*, has never been cited in the medical literature (28). It is likely that few physicians have read it.

The cognitive bias inherent in this metaphor continues from the cause to the solution. During the recent push for more gun control legislation, major medical journals engaged in a coordinated editorial charge with the solution of more gun control (29, 30). If the assumption is that the problem is "gun" violence then the solution is guaranteed to be to remove guns from the hands of people. Research isn't needed to find a solution; it is needed purely for propaganda purposes. The medical establishment knows that the answer is more gun control legislation. The only problem is how to get there.

There have been many studies on the effect of gun control legislation. They follow the same pattern as those of causation, picking around the edges of the real problem with mixed meager borderline-significant results one way or the other and a net finding of no effect (31). This lack of effect of gun control crosses borders. While both sides of this debate cherry-pick foreign examples (e.g., UK for gun-control enthusiasts, Switzerland for gun-liberty enthusiasts), there is really simply no pattern (32). And, as before, the more one controls for confounding variables, the less significance one finds. For instance, in 1988 Sloan et al. published a highly-cited comparison between Vancouver, British Columbia and Seattle, Washington. It concluded that the difference

in homicide rates was due to gun control. However, when the populations were normalized for demographics, the differences disappeared (33-35). More recent analyses have discovered no benefit from Canadian legislation (36). A recent review of the research on concealed carry permits found that of 12 refereed articles, six found that liberal concealed-carry laws were associated with reduced crime, five found no effect, and one found a positive relationship (37). While the UK is often hailed as an example of gun-control success, the discrepancy between the UK and the U.S. was greater before gun bans than it is now, and violent crime has increased dramatically since those bans have been put in place (38).

The claim that there has not been a great deal of research is false. The problem is that most of that found in the medical literature is agenda-driven and shows it. The objection to federal funding of research by the Centers for Disease Control and Prevention (CDC) in this area was not a rejection of science, but a recognition that the medical community has abandoned science in service to a political and ideological agenda. There is no question about that agenda. The stated goal of the Department of Public Health is "to reduce the number of handguns in private ownership" (39). The previous rise of this metaphor as an excrescence in the 1980s was described as follows by Canadian criminologist Gary Mauser (40):

"...Many academic works are tainted by crusading zeal. Gun control studies began sprouting up in the 1960s, but most are superficial and partisan. It is not too strong to say that many of these studies are an abuse of scholarship in that they invented, selected, or misinterpreted data in order to validate their a priori conclusions."

Mauser cites Sloan et al.'s article on Vancouver and Seattle as one of the most egregious examples. The poor scholarship, lack of objectivity, and politicized research of the medical community wedded to the "gun violence as disease" metaphor has made it the target of disdain within much of the social science community. One group of criminologists noted (41):

"...Perhaps surprisingly, neither medical and health writers nor the journals which publish their writing seem embarrassed by their agenda's close relationship to political lobbying organizations. On the contrary, exhortations to '[s]peak out for gun control' are seen as part of an admirable tradition of political advocacy by doctors and other health professionals in support of political measures designed to improve public health. In that

spirit, writers in such journals strongly avow the need for active political advocacy, for concerted action with anti-gun groups, and for open support of their political initiatives... Health advocates see no problem reconciling such an openly political agenda with the demands of scholarship. After all, guns are hateful things for which no decent purpose is imaginable, certainly not self-defense. Society's need to radically reduce gun availability is an inarguable truth to which there can be no legitimate opposition. Arrayed against the beneficent alliance of health advocates and anti-gun political advocates are only sinister 'powerful lobbies that impede constructive exploration of the full range of social options' by nefarious machinations, including racist propaganda cunningly designed to exploit white Americans' irrational fears of crime. The outward forms of scholarship must be observed, but the academic ideal of scholarly detachment is inapplicable...

The foregoing attitudes are central to the anomalies we find in reviewing the health advocacy literature against gun ownership. This literature exists in a vacuum of lock-step orthodoxy almost hermetically sealed from the existence of contrary data or scholarship. Such contrary data and scholarship routinely go unacknowledged; at best, they are evaded by misleading association with the sinister forces of the gun lobby...

To use Florian Znaniecki's frame of reference, the anti-gun health advocacy literature is a 'sagecraft' literature in which partisan academic 'sages' prostitute scholarship, systematically inventing, misinterpreting, selecting, or otherwise manipulating data to validate preordained political conclusions. Consciousness that one represents the forces of light against those of darkness can overwhelm not only the canons of scholarship but even the ordinary demands of personal honesty and integrity. Given the urgent needs of political advocacy, academic health sages all too often feel no compunction about asserting falsehoods, fabricating statistics, and falsifying references to counterfeit support for them."

Those who served that agenda 20 years ago now call for funding to serve it again (42). After 20 years of decreasing violent crime, recent events are being exploited to engage in histrionics about the sudden "crisis of firearm violence" (43). It should not be a surprise that most people believe that violent crime is increasing rather than decreasing (44, 45). What other conclusion would

one come to if one scanned the editorial pages of the *NEJM* or *JAMA*?

There is room for good research in violent crime and the role of firearms in society. It will not be done in an echo-chamber created by a slavish devotion to a metaphor in the service of a political agenda. The best research on violent crime, to date, has been performed outside the medical community, and has largely been ignored by it. It doesn't fit the narrative embedded in the metaphor of the "disease of gun violence," with its predetermined results and solutions. The adoption of this metaphor enshrines ideologic bias just as Lamarck enshrined socialist principles in Soviet biology.

DISCLOSURES

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