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Brought Into the Open: How the U.S. Compares to Other Countries in the Rate of Public Mass Shooters

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[LINK TO ABSTRACT](#)

Adam Lankford (2016) asserted that the United States accounted for 31 percent of the world's public mass shooters over the 47 years from 1966 to 2012. The news media around the globe widely publicized Lankford's claim as soon as he started circulating his unpublished paper in 2015. Yet, despite numerous requests from researchers and the news media over four years, Lankford refused to provide a list of his cases or explain how he compiled them (see Lott 2018b). In responding to our research (Lott and Moody 2019), Lankford (2019) finally provided an appendix listing the 292 cases upon which he says he based his 2016 article.³ The extreme difference between his findings and ours, we now know, is driven by Lankford not following the definitions that he says that he was using. While we are still missing the data for the regressions that he ran for his 2016 paper, we at least now know what cases his sample included and excluded.

Lankford (2016, 190–191) claimed that he followed the FBI, Department of Homeland Security, and NYPD traditional definition of public mass shootings, but we discover otherwise. He included cases for the United States that do not fit those definitions, and he excluded hundreds of cases from around the world that

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3. Lott (2018a) had criticized Lankford, finding that Lankford must have very vastly undercounted public mass shootings in other countries. The difference was extreme. Carl Moody joined Lott to author Lott and Moody (2019).

do. Both errors greatly exaggerate the United States' share of these attackers.

We also discovered that Lankford only included cases with just one shooter, except when he includes cases with two shooters. The only case involving two shooters in the United States that he counted was the 1999 Columbine attack, and the only such case outside the United States was from Russia.

Unlike Lankford, we immediately provided as part of Lott and Moody (2019) our entire list of public mass shooters as well as the news stories and sources that we relied on to put the list together. Even if Lankford thought there was a justification for studying only attacks with one or two shooters, it would have been easy to go through our list and explain why his list of such cases differed from ours. For example, Lankford excludes, without explanation, 37 foreign public mass shootings involving just one shooter and another 40 foreign cases involving two shooters. Furthermore, he does not justify the additional cases for the United States that he included that do not fit the FBI, Department of Homeland Security, and NYPD definition of public mass shootings. Both errors greatly exaggerate the United States' share of these attackers.

We took care to exhibit, at length, official definitions (Lott and Moody 2019, 41–42). Nowhere do any of those sources confine the definition of public mass shootings under examination to cases with just one shooter. Indeed, the NYPD included cases involving up to ten shooters. Lankford's response to our extensive demonstration of official definitions is to ignore that demonstration.

In his original paper, Lankford states, "For this study, attackers who struck outdoors were included; attackers who committed sponsored acts of genocide or terrorism were not. This is consistent with the criteria by the Federal Bureau of Investigation (FBI) in its 2014 active shooter report" (2016, 190–191). Nowhere in Lankford's original paper does Lankford mention that he limited the attacks to one or sometimes two shooters. We invite readers to obtain a PDF of Lankford (2016) and search on 'one,' 'alone,' 'lone,' 'solo,' and 'single' to confirm that he nowhere reveals that he has confined his definition to cases with one shooter (except when he includes two). The first example that he provides of a public mass shooting on the first page of his paper is an exception—the Columbine attack, which had multiple shooters—so that example especially obscures that, aside from Columbine and a Russian case, his list is confined to cases of lone shooters. A more complete discussion of Lankford's decision to include attacks with one or two shooters is provided below.

Finally, we discuss whether Lankford excluded terrorism cases as Glenn Kessler (2018) guessed he did, and we point out that even if all terrorism cases from outside the United States are excluded while those in the United States are included, the United States would account for less than 6 percent of the world's public mass shooters—less than one-fifth of the rate that Lankford claims.

Lankford's dataset

The dataset that Lankford provided in 2019 does not fit statements in his original paper. He says the NYPD dataset “may be nearly comprehensive in its coverage of recent decades, [though] it may be missing some older cases” (Lankford 2016, 191). Given that the NYPD found only 16 attacks with 27 killers outside the United States over the period that we examined, 1998 to 2012, it is clear that Lankford’s list comes nowhere near to being comprehensive. If foreign shooter cases where more than one shooter was involved are excluded from the NYPD dataset, there would be only 15 killers left, far too few for Lankford’s now-public “nearly comprehensive” dataset of 98 mass shooting incidents. Lankford writes: “All efforts were made to ensure that the same data collection methodology employed by the NYPD was used to obtain this information” (2016, 191). Yet, despite claiming that his dataset is consistent with the NYPD methodology, Lankford now claims for the first time that his dataset was limited to cases with just one and sometimes two shooters.

Perusing his dataset, we find that he does not limit the cases consistently. Lankford includes the 1999 Columbine case where two shooters killed 13 people. This deviation from the one-shooter requirement again raises the issue of how exactly the category is defined by Lankford.

Meanwhile, Lankford excludes the 1998 Jonesboro, Arkansas shooting where two shooters opened fire on their classmates with stolen firearms. There is no explanation for this exclusion. He also has one case from Russia with two shooters, but he excludes 40 other foreign incidents with two shooters that fit the FBI and NYPD definitions. Why are those 40 other incidents excluded?

There is no discussion whatever concerning why he includes cases with one or two shooters but excludes examples with three shooters. What is the reason for including a case of two killers working together but not three?

Again, Lankford excludes 37 foreign public mass shootings involving just one shooter, despite us providing him an entire list of our cases. Lankford does not discuss why he excluded these single-shooter cases. In seven of these cases the killer was a member of some group, but even in those cases there is no evidence that any of them were somehow not self-initiated.

Lankford also inflates the number of U.S. cases during the 1998–2012 period by including nine cases that don’t meet the FBI or NYPD definitions of public mass shootings. He includes cases that involve another crime such as a robbery, or that occur in a non-public place such as a residence, or that have fewer than four killed in a single place (see Table 1).

TABLE 1. United States cases that Lankford included that don't meet his definition

Date	Name	Reason it should be excluded
March 20, 2000	Harris	Robbery related
January 9, 2001	Park	Fewer than four killed in the same place excluding the attacker: Three killed at the business, and the other one later found slain at the shooter's store
September 9, 2001	Ferguson	Fewer than four killed in the same place: Two bodies found at a Sacramento city equipment lot, two bodies found at a city marina, the last one killed at the victim's home
December 9, 2007	Murray	Fewer than four killed in the same place: Two killed at the Youth With A Mission training center, and two killed at the New Life Church
September 2, 2008	Zamora	Fewer than four killed in public
March 10, 2009	McLendon	Fewer than four killed in public
March 21, 2009	Mixon	Fewer than four killed in the same place: Two killed during a routine traffic stop and two killed near apartment of his sister
August 14, 2010	McCray	The killer is an ex-gang member. The case could be gang-related.
August 8, 2011	Hance	Fewer than four killed in public

On whether the United States is an outlier

Definitions are worth fighting over. But let us now consider an array of definitions and see what the numbers say.

We know that the U.S. is not an outlier in the number of public mass shootings using the FBI/NYPD definition, which does not limit the incidents to any particular number of shooters. In fact, despite having 4.5 percent of the world's population, the U.S. share of the number of public mass shootings is 2.88 percent (Lott and Moody 2019, 53, Table 1).

Is the U.S. an outlier if we use the NYPD methodology that Lankford claimed to have used? Is the United States an outlier if we use Lankford's definition of one or two shooters?

While the NYPD definition does not limit the number of shooters in any way, the NYPD dataset has a maximum of ten shooters. Therefore, we also investigate a definition that uses ten as a limit on the number of shooters. For the same reason, we limit Lankford-style incidents to the maximum number of shooters in his now-public dataset, namely two, since he includes the Columbine attack and a case from Russia with two shooters.

Lankford excludes all incidents involving an unknown number of shooters while chiding us for having missing values: "In fact, [Lott and Moody] admit that

they do not even know the number of shooters for all incidents they are counting” (Lankford 2019, 73). But the incidents happened, and people were killed even if the published reports did not reveal the number of perpetrators. By using only cases for which the number of perpetrators is known, Lankford substantially undercounts the number of incidents in foreign countries. This is not a problem if we are counting public mass shootings using the FBI/NYPD definitions which make no reference to the number of shooters. If we adopt the ≤ 10 definition, we have 289 cases. However, adding those cases for which the number of shooters is missing, we have 1,341 cases. Lankford undercounts the number of foreign shootings by 1,052 for just the years from 1998–2012.

To satisfy the ≤ 10 definition, we need to estimate the number of cases with missing values that would be likely to have more than 10 shooters. Of all the incidents where the number of shooters is known, 73 percent have 10 shooters or fewer. Therefore, we estimate that the number of cases with missing values that have 10 or fewer shooters is $0.73 \times 1,052 = 768$. We assume that the distribution of cases with an unknown number of shooters is the same as the distribution of known shooters. We know the number of cases for which the number of shooters is 1, 2, ..., 10. We divide each one of these by 289 to get the percentage of cases with that number of shooters. Assuming the cases with missing values have the same percentages, we can estimate the total number of cases with 1, 2, ..., 10 shooters. For example, the number of non-U.S. single shooters in our sample is 98. The corresponding percentage of single shooters is $98 / 289 = 0.34$. Therefore $0.34 \times 768 = 261$ is our estimate of the number of single shooters from the cases with missing values. The estimate of all non-U.S. shooters who acted alone is $98 + 261 = 359$. The number of cases with two shooters is 58, $58 / 289 = 0.2$, $0.2 \times 768 = 154$. The number of non-U.S. shooters who attacked in groups of one or two is therefore $359 + 58 + 2 \times 154 = 725$. The number of shooters in groups of 3, 4, ..., 10 are calculated the same way. The results are presented in Table 2.

Using the ≤ 10 definition, the United States is not an outlier in public mass shooters. We estimate that the United States has 1.25 percent of the number of all such shooters, while having 4.5 percent of the world’s population. Using only the cases where the number of shooters is known, the U.S. has 4.4 percent of the number of incidents where the known number of shooters is 10 or fewer (even though we are excluding many foreign cases with missing values, 73 percent of which can be expected to have ten or fewer shooters). Using a ≤ 2 definition, the United States has less than six percent of the world’s shooters who attacked alone or with one other person. Using a slightly expanded version of Lankford’s definition, three or fewer shooters, yields an estimate of 4.45 percent of the world’s public mass shooters are American, less than America’s share of the world’s population.

TABLE 2. Share of the U.S. in world public mass shootings

Measure	U.S.	Rest of the world	Total	Percent U.S.
1966–2012				
Lankford (2016) findings	90	202	292	30.82%
1998–2012				
NYPD definition, ≤ 10 shooters, estimated	45	3,565	3,610	1.25%
NYPD definition, ≤ 10 shooters, known	45	975	1,020	4.41%
NYPD definition, ≤ 3 shooters, estimated	45	967	1,012	4.45%
Lankford definition, ≤ 2 shooters, estimated	45	725	770	5.84%
Lankford definition, = 1 shooter, estimated	41	359	400	10.25%
Population (millions)	295.5	6,235.8	6,531.3	4.52%
<i>Notes.</i> By 'estimated' we mean that the distribution of cases with an unknown number of shooters is assumed to be the same as the distribution of known shooters. We adjusted the number of incidents with missing values by the proportion of all cases where the number of shooters is known that have 10 or fewer shooters (73 percent). All programs, data and results may be downloaded from from the journal website (link).				

Limiting cases to where only one shooter was involved

According to Lankford,

Lott and Moody's own data show that 29.7 percent of the entire world's public mass shootings by single perpetrators were committed in the United States, and that America had more than six times its share of the world's public mass shooters who attacked alone. This is remarkably similar to my original study's published result: I found that 30.8 percent of public mass shooters attacked in the United States (Lankford 2016), which would also be more than six times our share of the world's public mass shooters ($30.8 / 4.5 = 6.8$). (Lankford 2019, 75–76)

But Lankford omits all cases where the number of shooters is not known. If the incidents where the number of shooters is known is a good sample of all incidents, the U.S. has 10 percent of the world's lone-wolf shooters, far short of Lankford's 30 percent.

We don't know why the U.S. has relatively more lone-wolf shooters, or why the rest of the world has fewer. We offered speculations on the matter (Lott and Moody 2019, 39, 46–49). The difference in the prevalence of lone-wolf and group shootings might be due to the fact that terrorist groups are more prevalent outside the United States. Lankford blames firearms. Our view is simply that the prevalence of lone-wolf shootings in the U.S. is a complex issue of culture and social alienation,

and it is irresponsible to jump to policy conclusions, especially because guns are also used for defense and protection.

Lott and Moody (2019), in line with the official definitions, included cases that involve multiple shooters, which are far more frequent in many other countries than in the United States. In the title of his response, Lankford (2019) claims “Confirmation That the United States Has Six Times Its Global Share of Public Mass Shooters.” But that is not what he claims in the body of the paper where he says: “the United States had more than six times its global share of public mass shooters *who attacked alone*” (2019, 73, our emphasis).

It is worth examining how Lankford, once pressed, responds to the challenge to his definition. In the first paragraph he speaks of “public mass shooters,” without defining the term (Lankford 2019, 69). In the next paragraph he addresses the meaning of the term. We quote the paragraph in full:

They almost always attack alone. This is such common knowledge that I am surprised it requires any comment. Most laypeople already know this without my needing to say so, and certainly all researchers with experience in this area recognize this simple fact. It is one of the things that makes public mass shootings so terrifying: they are one of the most vivid demonstrations of just how much death and destruction a single person can cause on his own. (Lankford 2019, 69)

Notice that Lankford still has not defined “public mass shooter.” In the next paragraph he refers to listings of cases in documents by the FBI, NYPD, and two other U.S.-based sources, saying that they show that “95–98% of *these crimes* are committed by solo perpetrators acting alone” (Lankford 2019, 70, our emphasis). And in the next paragraph he cites U.S. media stories to the same effect. Lankford has not in fact stated his definition of “public mass shooter.” He has worked from *an idea* of the kind of public mass shooter usually seen in the United States, and then imposed that idea in investigating “public mass shooters” globally.

So, when Lankford says on the first page of his response, “you have to know only one thing about this specific type of criminal.... They almost always attack alone. This is such common knowledge that I am surprised it requires any comment” (2019, 69), we reply: Well, Professor Lankford, public mass shooters almost always attack alone *in the United States*. In the rest of the world they attack both alone and in groups, sometimes in large groups.

Lankford says,

Lott and Moody (2019) lump seemingly everything into their list of incidents from other countries: attacks by militia groups, paramilitary fighters, terrorist cells, and more. They include the aforementioned 2004 Lord’s Resistance

Army attacks in Uganda, as well as hundreds of other acts of group violence.
(Lankford 2019, 72)

Nowhere in the FBI definition of public mass shooters does it limit the number of shooters. If a large group of shooters committed a public mass shooting in the United States, would the FBI ignore it? Besides adhering to official definitions, we appeal to plain language: ‘shooter/shooting’ signifies people getting shot by gunfire; ‘mass’ signifies many victims; ‘public’ signifies in a public place. No part of the expression signifies a shooter working alone. Both plain language and official definitions support our definition of public mass shootings. If one wishes to confine investigation to cases with just one shooter, one should say so, but that was never done by Lankford (2016).

Lankford writes:

[M]ost other researchers have not included gang violence or other group violence in their studies: group behavior is so profoundly different from that of individuals. I tried to follow their lead by similarly applying consistent criteria to all cases worldwide, and therefore excluded gang violence, along with sponsored acts of terrorism or genocide that did not appear self-initiated by the perpetrator, because group behavior plays such an important causal role in those other types of crimes. (Lankford 2019, 71–72)

We also excluded gang violence—because the FBI excludes it—and other criminal activity such as bank robberies. Such actions are primarily motivated by the profits associated with illegal activity. As for “sponsored acts of terrorism or genocide,” we exclude incidents involving state actors. As we argued previously (Lott and Moody 2019, 43–44), to operationalize “sponsored acts of terrorism” would require defining *sponsored*—which Lankford never does—and having sufficient information to decide case by case, and that will often be very difficult for foreign cases and older cases, as reporting is often very scanty and only in foreign languages. Lankford needs to face up to the fact that events globally are far too challenging, informationally, to be handled with vague, impressionistic criteria about ascribed ‘self-initiation’ and the like.

We do not exclude incidents of public mass shooting just because we think we know the motivation of the shooter or shooters. The motivation of shooters in large groups may be different from the motivation of shooters we have seen in the United States so far, but Lankford never says in his 2016 paper that he is studying only single shooters who are exclusively inner-directed. We know of no way to determine whether the perpetrators in groups were ‘self-initiated’ or not. Presumably they joined the group knowing that they might be involved in a multiple-victim public shooting, because that is what the group does. Is that self-

or group-initiation? Lankford includes the 2009 Fort Hood case where a shooter killed 13 people. The shooter had been in extensive email contact with Anwar al-Awlaki, the al-Qaeda imam. Is that incident self-initiated?

We included incidents involving groups of shooters because we thought that his claim that the U.S. has 31 percent of “public mass shooters” included all public mass shooters. We hope that Lankford will agree that, counting all incidents that satisfy the FBI definition of public mass shootings, the U.S. has a very small share of public mass shooters as we showed in our previous analysis, i.e., less than three percent of the number of shooters, incidents, or people killed (Lott and Moody 2019, 53).

We now know that Lankford’s definition of public mass shootings does not conform to the FBI, Department of Homeland Security, or NYPD definitions. Nowhere do these organizations limit their public mass shooting cases to just one shooter who is sufficiently ‘inner-directed,’ nor do they exclude ‘sponsored’ attacks (see Lott and Moody 2019, 41–42.) The largest number of shooters in the NYPD dataset is ten, but this limit is never explicitly stated as one of the conditions required for inclusion.

Excluding terrorism cases?

Lankford originally claimed:

these public mass shootings—which are also sometimes referred to as *active shootings* or *rampage shootings*—stand out as particularly concerning because they are typically premeditated attacks that strike random, innocent victims (Newman, Fox, Roth, Mehta, & Harding, 2004). This makes them functionally similar to terrorism (Lankford, 2013). (Lankford 2016, 188)

No mention was made of the number of terrorists involved in an attack, though he did say: “attackers who committed sponsored acts of genocide or terrorism were not” included (Lankford 2016, 191). In his later paper, Lankford explained that he had included terrorist cases in instances where only one terrorist carried out the attack: “I did include shooters with terrorist motives (like the 2009 Fort Hood shooter) as long as their behavior appeared self-initiated” (2019, 75).

Despite repeated requests for clarification on what Lankford (2016, 191) meant by “sponsored” attacks, Lankford has still never answered us. Should all terrorist attacks be excluded? We think not, both because the NYPD and FBI reports include terrorist attacks and because terrorist and non-terrorist attacks often are, as Lankford himself says, “functionally similar” (2016, 188). If the San

Bernardino killers got training in the Middle East, were they sponsored? Was the first Fort Hood shooter sponsored because he was in communication with one of the influential clerics associated with ISIS? Was the Pulse nightclub shooter sponsored because he was inspired by information put out over the Internet by ISIS? Is funding required to list attacks as sponsored?

Lott (2018a) used the University of Maryland Global Terrorism Database (GTD) to exclude all foreign cases that it labeled as a terrorist attack. Given that we included U.S. terrorist cases, just as the FBI and other organizations included them, but excluded foreign cases, our measure is biased towards making the U.S. share of world public mass shooters larger than it is. Lott concluded:

Even if one were to eliminate all foreign terrorist attacks on top of all the insurgency ones (and the NYPD dataset clearly includes terrorist cases for both the U.S. and foreign countries), that leaves 709 foreign mass public shooters. That estimate of the number of shooters is still 26 times greater than the NYPD count and 42 times greater if the Mumbai case is cut. (Lott 2018a, 12)

That would imply that the U.S. would make up 5.97 percent of the world's public mass shooters, counting only cases where the number of shooters is known. Assuming the distribution for cases with an unknown number of shooters is the same as known ones, the U.S. share would be less than 2 percent. The claim that "once these cases were removed from the analysis, Lott's results more closely resembled Lankford's" (Booty et al. 2019, 2) is therefore not remotely close to being correct.

Conclusion

Lankford's study makes it extremely clear how important it is for researchers to provide their data to others or at least tell people their data sources and how their data were collected. For four years, Lankford refused to do either, and his misleading and error-filled research received much attention worldwide. It shows that the press ought to be very skeptical of studies from scholars who refuse to provide others with their data. Even a quick look at Lankford's list of cases would have made it very clear that there were significant errors in both the list of United States and foreign cases.

As it is, despite repeated requests, we are still missing the rest of the data that Lankford used to run his regressions, and we have been unable to replicate anything close to his estimates even when using his flawed list of public mass shooters. Lankford has also declined to even answer any questions about how that other data

set was put together.

Lankford uses neither the FBI nor NYPD definitions that he continually said that he used. We wonder whether the *New York Times*, *Washington Post*, and *USA Today* would have been somewhat reticent to use Lankford's results if they had known that he had not in fact conformed to those definitions. Now we know that his definition excluded all but a few of the non-U.S. public mass shootings. Further, his dataset contains many errors and he doesn't use any definition consistently.

We would have no quarrel with Lankford studying lone-wolf shooters, though he didn't do that, but if he makes an international comparison concerning the number of 'shooters' *without* the qualification 'who acted alone,' then he must take them as they come, often in groups. The United States has less than three percent of the world's public mass shootings or people killed in those incidents (Lott and Moody 2019, 53, Table 1). Using the NYPD definition, the U.S. has much less than its share of public mass shooters.

Allowing other researchers to examine his data would help provide answers to the remaining questions concerning the mysterious Lankford datasets.

Data and code

All data, programs, and results used in the writing of this paper may be downloaded from the journal website ([link](#)).

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