

The FBI's Misinterpretation of the Change in Mass Public Shooting



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An FBI report released on September 16, 2014 makes the assertion that active shooter attacks and deaths have increased dramatically since 2000—both increasing at an annual rate of about 16%. As the headline in the Wall Street Journal stated, “Mass Shootings on the Rise, FBI says.”

But the FBI made a number of subtle and misleading decisions as well as outright errors. Once these biases and mistakes are fixed, the annual growth rate in homicides is cut in half. When a longer period of time is examined (1977 through the first half of 2014), deaths from mass public shootings show only a slight, statistically insignificant, increase—an annual increase of less than 1%.¹

The FBI misleadingly includes cases that aren't mass shootings—cases where no one or only one person was killed in a public

place. While the FBI assures people that it “captured the vast majority of incidents falling within the search criteria,” their report missed 20 shootings where at least two people were killed in a public place. Most of these missing cases took place early on, biasing their results toward showing an increase.

Introduction

In a report released in September, 2013, the FBI claimed that between 2000 and 2013 there were 160 “active shooting incidents” in public places (Federal Bureau of Investigation, 2013). Even more worrisome, these attacks increased dramatically from just a single one in 2000 to 17 in 2013 and murders from 7 to 86 over the same period. Statistically, over time they find that attacks and the number of people killed had increased at an average annual rate of 16% (Figures 1 and 2). With the FBI officially behind the claims, media outlets worldwide gave this extensive coverage.

While the FBI report provides graphs illustrating “active shooting incidents,” not mass shootings, the media has understandably interpreted the report as implying that mass public shootings have similarly increased. For example, the report's introduction assures readers, “The study does not encompass all mass killings or shootings in public places and therefore is

limited in its scope. Nonetheless, it was undertaken to provide clarity and data of value to both law enforcement and citizens as they seek to stop these threats and save lives during active shooter incidents” (FBI, 2013, p. 5). The report discusses mass public shootings, but it never makes it clear to the readers that these types of fatalities and attacks are actually not increasing over time. This caused great confusion.

A quick look at major headlines shows how the press has read this report:²

“Mass shootings on the rise, FBI says,” *Wall Street Journal* (Barrett, 2014).

“FBI confirms a sharp rise in mass shootings since 2000,” *New York Times* (Schmidt, 2014).

“FBI: Mass shooting incidents occurring more frequently,” *CNN* (Perez, 2014).

“FBI study: Deaths in mass shootings increasing,” *BBC* (“FBI study,” 2014).

Figure 1: FBI's measure of active shooting attacks from 2000 to 2013

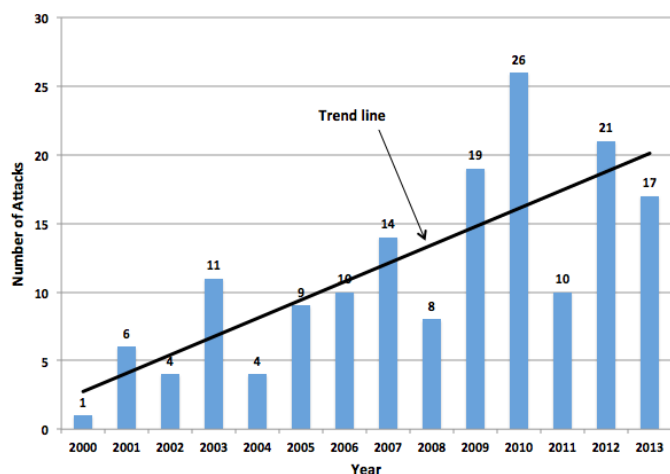
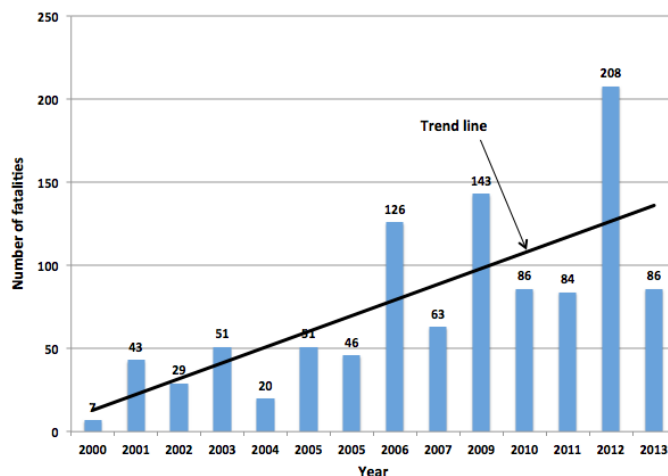


Figure 2: FBI's measure of fatalities from active shooter attacks from 2000 to 2013



The FBI report enters what has been a lively debate on whether mass public shootings have been increasing. The FBI report closely matches an earlier sample gathered by *Mother Jones* magazine (Follman, 2014). Academics, such as James Alan Fox, have taken the *Mother Jones* numbers to task, primarily for their arbitrary and, more important, inconsistent classification of cases over time (Fox, 2013). But the problems are much more extensive than previously noted.

Unfortunately, the FBI report engages in bait and switch and sleight of hand. As we will show, mass public shootings have only increased ever so slightly over the last four decades. While the FBI study discusses “mass shootings or killings,” they miss a large number of mass public shootings that should be included in the sample. Their graphs are based on many cases that had absolutely nothing to do with mass killings or even killings of any kind. Worse, the cases that they miss and the cases that shouldn't have been included are not random. Both of these

actions work to make it look as if there was a much larger increase in mass public shootings than actually occurred. Over the last four decades there has been no statistically significant increase in these attacks.

Problems with the Data

Out of the 160 cases the FBI report counts from 2000 to 2013, 32 instances involved a gun being fired with no one killed (see Appendix 2). And 11 of those have either zero or just one person wounded. Another 35 cases involved one single person murdered. It is hard to see how the FBI could have erroneously included these cases, which make up 42% of their 160 cases, in any discussion of “mass killings.” Surely they do not fit the FBI’s old definition, which required four or more murders. And it does not even fit their new one of three or more murders.

A major difficulty with studying so-called “active shooters” is that there is no official data source for such attacks. The term “active shooters” is very broad: “an individual actively engaged in killing or attempting to kill people in a confined and populated area,” and thus doesn’t require that anyone actually be killed. As we will show, the FBI data set misses 20 mass shootings where at least two people have been killed. Yet, the task for properly identifying all cases where no one has been killed is much more difficult. It is doubtful that police will record all these events, nor is the media likely to cover cases where there are no fatalities. An additional reason for excluding cases where no one is killed is that it may produce a systematic bias: it will be relatively easier to identify more recent public shootings where zero or one person was killed and thus

that would tend to produce an upward, if unintentional, bias in the number of cases over time.

In fact, these non-mass shootings, with zero or one person killed, drive much of the purported increase in the number of attacks. Out of the cases where no one or only one person was killed, 50 occurred during the last seven years of the period the FBI examines, and only 17 cases took place during the first seven years. In other words, the later period is padded much more heavily with these extra cases.

For example, in 2010, the FBI reports that there were 29 active shooter cases, but just 9 involve more than 1 fatality. In 2013, the FBI reports 17 attacks, but again just 9 involve more than 1 fatality.

“Though additional active shooter incidents may have occurred during this time period, the FBI is confident this research captured the vast majority of incidents falling within the search criteria” (Federal Bureau of Investigation, 2013, p. 5). Despite the FBI’s assurances, their report misses 20 shootings where at least two people were killed in a public place (see Appendix 1). To put this in perspective, their data set misses 20 out of what should have been a total of 113 cases. They only report 93.

Take some examples of what the FBI report missed:

- a shooting at an Elgin, Illinois bar in 2001 by Luther Casteel that left 2 dead and 21 wounded (“Man charged with deadly shootout,” 2001, n.d.);

- a shooting at a Columbus, Ohio concert in 2004 by Nathan Gale that left 4 dead and 7 wounded (Blanco, n.d.);
- a shooting at a St. Louis, Missouri office in 2006 by Herbert Chambers that left two people dead (Leonard, 2006);
- and a 59-year-old businessman who killed three people at his business in St. Louis in 2013 (“St. Louis shooting update,” 2013).

Unfortunately, these cases were not missing at random. Indeed, these missing cases were three times more likely to occur in the first half than the second half (15 to 5). Thus, the missing observations again bias the results toward finding a larger increase over time. Erroneously including non-mass shootings as well as omitting many mass shootings biases the results to make it look as if attacks were increasing.

Table 1: How the inclusion of non-mass shooting cases and missing other mass-shooting attacks biases the FBI report to show an increase in attacks over time

Year	FBI Total	Corrected Total = FBI Total – Cases with no one killed – Cases with one person killed + Cases that should have been included	Cases with no one killed	One person killed	Cases that should have been included	Averages for the first and second half of the 14 years examined by the FBI		
						Cases with no one killed	Cases where one person was killed	Cases that should have been included
2000	1	4	0	0	3			
2001	6	5	1	2	2			
2002	4	8	0	0	4			
2003	11	7	1	3	0			
2004	4	4	1	0	1			
2005	9	8	2	3	4			
2006	10	8	1	3	2	6	11	16
2007	14	11	2	2	1			
2008	8	6	2	1	1			
2009	19	9	2	8	0			
2010	26	9	10	7	0			
2011	10	7	2	1	0			
2012	21	17	4	1	1			
2013	17	11	4	4	2	26	24	5

Limiting the Period Studied to 2000 to 2013

The FBI chose the year 2000 as the starting date for the analysis. But everybody who has studied these attacks knows that 2000 and 2001 were unusually quiet years with few mass shootings. Thus, by starting with those years and padding the cases in later years with non-mass shooting attacks, the study's authors should have known perfectly well what the result would be.

For example, while the FBI claims that there was only one active shooter attack in 2000, we show that there were in fact four cases, and we didn't even try to find whether they missed attacks where no one was killed. By contrast, in 1999, there were eight public shootings where at least two people were killed. Presumably, there were many more shootings where no one was killed.

Fortunately, it is easy to examine a much longer period of time. Back in 2000, University of Chicago's Professor Bill Landes and then-Yale Law School Research Scholar and now-CPRC President John Lott put together data on mass public shootings from 1977 to 1999.³ In many ways the criteria that Lott and Landes set were similar to what the FBI said it would follow: non-gang attacks in public places. Shootings that were also part of some other crime, such as a robbery, were also

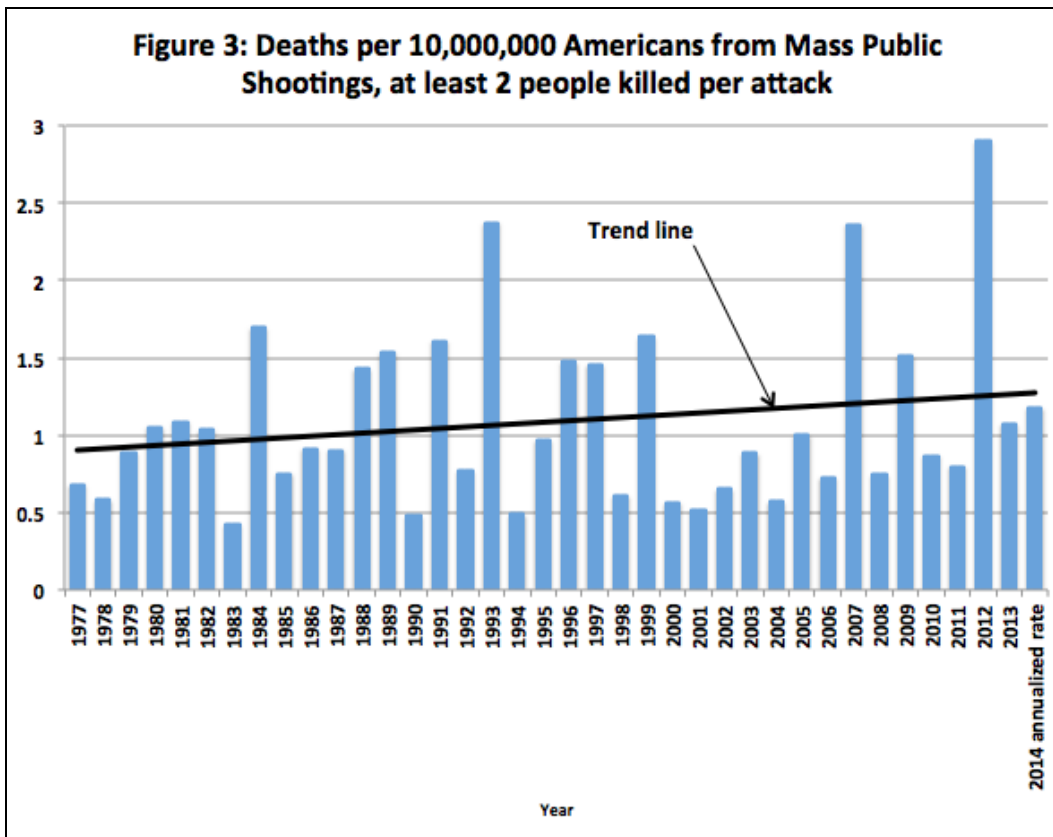
excluded. However, Lott and Landes examined mass shootings—cases where at least two people had been murdered in these public shootings.

Figure 3, with the corrected data and covering the period from 1977 through the first seven months of 2014, shows the deaths from mass public shootings. There is a slight increase in deaths over these 38 years, but even that small upward trend largely depends on one highly unusual year, 2012, when 91 deaths occurred.

While the number of mass public shootings might have increased over time, the change is just a tiny fraction of the change claimed by FBI (see Table 2). Using the FBI data implies a statistically significant 16.4% annual increase in deaths from mass public shootings. We corrected the FBI data and only looked at cases where at least two people have been killed. Doing so cuts the annual increase in deaths from mass public shootings in half. But the real change in results occurs when the longer period of data is used. Doing that reduces the annual increase to just 0.98%; just 6% of the increase implied by the FBI data and the relationship is no longer statistically significant.

Table 2: Regression estimating the increase over time in deaths from 1977 through July 2014 (regressing the natural log of mass public shooting deaths per 10,000,000 Americans on the number of years since 1977)

	Percent change in death rate for each additional year	t-statistics	Statistically significant	Percent size of estimate for CPRC estimate compared to estimate using FBI data
FBI Data 2000 to 2013				
All years	16.4%	4.50	Yes	
Not including 2012	15.2%	3.80	Yes	
Corrected data 2000 to 2013				
All years	8.7%	3.11	Yes	53.0%
Not including 2012	7.0%	2.45	Yes	46.1%
Corrected data 1977 to 2014				
All years	0.976%	1.38	No	6.0%
Not including 2012	0.615%	0.88	No	4.0%



Conclusion

Clearly, the FBI report contains significant errors. The FBI is not studying all the mass public shootings that occurred over the period of time and also pads the report with non-mass shootings. Correcting their errors and focusing on mass public shootings cuts the size of the claimed annual increase in deaths in half. Using data back to 1977, collected in previous research, virtually eliminates any increase in mass public shootings. The FBI report appears to be politically driven.

Bibliography

- Barrett, D. (2014). "Mass shootings on the rise, FBI says." *Wall Street Journal*, September 24. Available at <http://online.wsj.com/articles/mass-shootings-on-the-rise-fbi-says-1411574475>.
- Blanco, J. I. (n.d.). "Nathan Gale." *Murderpedia*. Available at <http://www.murderpedia.org/male/G/g/gale-nathan.htm>.
- Carroll, L., & O'Connor, M. (2014). "Have there been 74 school shootings since Sandy Hook? A closer look at a tricky statistic." *Politifact.com*. Available at <http://www.politifact.com/truth-o-meter/statements/2014/jun/13/everyt-own-gun-safety/have-there-been-74-school-shootings-sandy-hook-clo>.
- Fantz, A., Knight, L., & Wang, K. (2014). "A closer look: How many Newtown-like school shootings since Sandy Hook?" *CNN.com*. Available at <http://www.cnn.com/2014/06/11/us/school-shootings-cnn-number>.
- "FBI study: Deaths in mass shootings increasing." (2014). *BBC*, September 24. Available at <http://www.bb.com/news/world-us-canada-29357199>.
- Federal Bureau of Investigation. (2013, September 16). *A study of active shooter incidents in the United States between 2000 and 2013*. Washington, DC: U.S. Department of Justice.
- Fessenden, F. (2000). "They threaten, seethe and unhinge, then kill in quantity." *New York Times*, April 9. Available at <http://www.nytimes.com>.
- Follman, M.(2014). "Yes, Mass Shootings are occurring more often." *Mother Jones*, October 21. Available at <http://www.motherjones.com/politics/2014/10/mass-shootings-rising-harvard>.
- Fox, J. A.(2013). "Mass shootings not trending." *Boston Globe*, January, 23. Available at http://www.boston.com/community/blogs/crime_punishment/2013/01/mass_shootings_not_trending.html.

- Leger, D. (2014). "‘Active shooter’ incidents on the rise." *USA Today*, September 25. Available at <http://www.usa.today.com/story/news/nation/2014/09/24/active-shooter-incidents-rising-fbi-finds/16158921/>.
- Leonard, C. (2006). "4 dead after gunman kills his child’s mother, opens fire at workplace." *Associated Press*, April 19. Available at http://blogs.kansascity.com/crime_scene/files/4_dead_after_gunman_kills_his_childs_mother_opens_fire_at_workplace.pdf.
- Lott, J. R., Jr. (2003). *The bias against guns*. Washington, DC: Regnery.
- Lott, J. R., Jr. (2010). *More guns, less crime* (3rd ed.). Chicago: University of Chicago Press.
- Lott, J. R., Jr. & Landes, W. M. (1999). Multiple victim public shootings, bombings, and right-to-carry concealed handgun laws: Contrasting private and public law enforcement, *Social Science Research Network*. Available at <http://ssrn.com/abstract=161637>.
- Lott, J. R., Jr. & Landes, W. M. (2000). Multiple victim public shootings. *Social Science Research Network*. Available at <http://ssrn.com/abstract=272929>.
- "Man charged with deadly shootout at tavern." (2001). *PoliceOne.com*, April 17. Available at <http://www.policeone.com/news/36634-Man-charged-with-deadly-shootout-at-tavern-Elgin-IL>.
- Perez, E. (2014). "FBI: Mass shooting incidents occurring more frequently." *CNN*, September 24. Available at <http://www.com/2014/09/24/justice/fbi-shooting-incidents-study/index.htm>.
- Schmidt, M. (2014). "F.B.I. confirms a sharp rise in mass shootings since 2000." *New York Times*, September 24. Available at <http://mobile.nytimes.com/2014/09/25/us/25shooters.html>
- "St. Louis shooting update: Cops ID Ahmed Dirir, 59-year-old businessman, as gunman who killed 3, then himself." (2013). *CBS News*, June 14. Available at <http://www.cbsnews.com/news/st-louis-shooting-update-cops-id-ahmed-dirir-59-year-old-businessman-as-gunman-who-killed-3-then-himself>.
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Appendix 1: The FBI's Missing Cases: Cases of Mass Public Shootings where at least two were people killed

Year	Month	Day	City	State	Attacker Name	Killed in public	Wounded	Location
2000	3	2	Pittsburgh	Pennsylvania	Ronald Taylor	2	3	Restaurant
2000	3	10	Savannah	Georgia	Darrel Ingram	2	1	School
2000	4	28	Mount Lebanon	Pennsylvania	Richard Baumhammers	5	1	neighborhood county mental health office / Restaurant
2001	1	11	Nevada County	Nevada	Scott Thorpe	3	2	Restaurant
2001	4	13	CHICAGO	Illinois	Luther Casteel	2	21	Bar
2002	4	6	TACOMA	Washington	Felise Kaio Jr	2	1	Bar
2002	5	31	Long Beach	California	Antonio Pineiro	2	4	Supermarket
2002	6	11	Kearney	Missouri	Lloyd Robert Jeffress	2	2	Monastery
2002	10	29	Tucson	Arizona	Robert S. Flores	3	0	School
2004	12	8	Columbus	Ohio	Nathan Gale	4	7	Concert
2005	2	24	Smith County	Texas	David Hernandez Arroyo Sr	2	4	Tyler Courthouse
2005	4	8	Eastern Shore	Maryland	Allison Lamont Norman	9	5	School and Multiple public locations
2005	12	4	FORT LAUDERDALE	Florida	Ralston Davis Jr	2	1	Multiple locations(apartment/gas station)
2006	4	19	ST. LOUIS	Missouri	Herbert Chalmers Jr	2	1	Home and Workplace
2006	9	3	Shepherdstown	West Virginia	Douglas W. Pennington	2	0	University
2007	8	6	Newark	New Jersey	Melvin Jovel	3	1	School
2008	10	26	Conway	Arkansas	Kawin Brockton, 19, Kelsey Perry, 19, Mario Tony, 20, Brandon Wade, 20	2	1	School
2012	2	21	Norcross	Georgia	Jeong Soo Paek	3	0	at the spa
2013	6	12	St. Louis	Missouri	Ahmed Dirir	3	0	Office (in a Missouri office at AK Home Health Care LLC)
2013	6	20	West Palm Beach	Florida	Javier Burgo	2	0	Alexander W. Dreyfoos School of the Arts

Appendix 2: The FBI's Cases where zero or one person has been killed

Year	Month	Day	City	State	Attacker Name	Killed
2001	3	22	El Cajon	California	Jason Anthony Hoffman	0
2003	7	17	Charleston	West Virginia	Richard Dean Bright	0
2004	2	9	East Greenbush	New York	Jon William Romano	0
2005	2	13	Kingston	New York	Robert Charles Bonelli Jr.	0
2005	11	20	Tacoma	Washington	Dominick Sergil Maldonado	0
2006	3	25	Reno	Nevada	James Scott Newman	0
2006	10	9	Joplin	Missouri	Thomas White	0
2007	3	5	Signal Hill	California	Alonso Jose Mendez	0
2007	10	10	Cleveland	Ohio	Asa Halley Coon	0
2009	4	26	Hampton	Virginia	Odane Greg Maye	0
2009	5	18	Cut Off	Louisiana	Justin Doucet	0
2010	2	3	Macomb	Illinois	Jonathan Joseph Labbe	0
2010	2	10	Knoxville	Tennessee	Mark Stephen Foster	0
2010	2	23	Littleton	Colorado	Bruco Strongeagle Eastwood	0
2010	3	4	Arlington	Virginia	John Patrick Bedell	0
2010	5	7	Bloomfield	New Jersey	Rasheed Cherry	0
2010	5	27	New York Mills	New York	Abraham Dickan	0
2010	9	22	Crete	Nebraska	Akouch Kashoual	0
2010	10	8	Carlsbad	California	Brendan O'Rourke	0
2010	10	29	Reno	Nevada	John Dennis Gillane	0
2010	12	14	Panama City	Florida	Clay Allen Duke	0
2011	8	27	Queens	New York	Tyrone Miller	0
2011	9	13	Girard	Kansas	Jesse Ray Palmer	0
2012	2	8	Middletown	New York	Timothy Patrick Mulqueen	0
2012	7	17	Tuscaloosa	Alabama	Nathan Van Wilkins	0
2012	8	27	Baltimore	Maryland	Robert Wayne Gladden Jr.	0
2012	12	15	Birmingham	Alabama	Jason Heath Letts	0
2013	1	10	Taft	California	Bryan Oliver	0

Appendix 2 (Continued): The FBI's Cases where zero or one person has been killed

2013	4	12	Christiansburg	Virginia	Neil Allen MacInnis	0
2013	6	21	Greenville	North Carolina	Lakin Anthony Faust	0
2013	10	26	Albuquerque	New Mexico	Christopher Thomas Chase	0
2001	4	23	San Jose	California	Cathline Repunte	1
2001	12	6	Goshen	Indiana	Robert L. Wissman	1
2003	4	24	Red Lion	Pennsylvania	James Sheets	1
2003	5	9	Cleveland	Ohio	Biswanath A. Halder	1
2003	8	19	Andover	Ohio	Richard Wayne Shadle	1
2005	1	26	Toledo	Ohio	Myles Wesley Meyers	1
2005	11	8	Jacksboro	Tennessee	Kenneth S. Bartley	1
2005	11	22	North Augusta	South Carolina	Unknown	1
2006	6	25	Denver	Colorado	Michael Julius Ford	1
2006	7	28	Seattle	Washington	Naveed Afzal Haq	1
2006	8	30	Hillsborough	North Carolina	Alvaro Castillo	1
2006	9	29	Cazenovia	Wisconsin	Eric Jordan Hainstock	1
2007	8	30	Bronx	New York	Paulino Valenzuela	1
2007	10	8	Simi Valley	California	Robert Becerra	1
2008	3	3	West Palm Beach	Florida	Alburn Edward Blake	1
2009	4	7	Temecula	California	John Suchan Chong	1
2009	6	1	North Little Rock	Arkansas	Carlos Leon Bledsoe	1
2009	6	10	Washington D.C.	Washington D.C.	James Wenneker von Brunn	1
2009	7	1	Simi Valley	California	Jaime Paredes	1
2009	7	25	Houston	Texas	Unknown	1
2009	11	6	Orlando	Florida	Jason Samuel Rodriguez	1
2009	11	7	Vail	Colorado	Richard Allan Moreau	1
2009	11	10	Tualatin	Oregon	Robert Beiser	1
2010	1	4	Las Vegas	Nevada	Johnny Lee Wicks Jr.	1
2010	3	9	Columbus	Ohio	Nathaniel Alvin Brown	1
2010	3	30	Tarpon Springs	Florida	Arunya Rouch	1
2010	4	19	Knoxville	Tennessee	Abdo Ibssa	1
2010	9	20	El Paso	Texas	Steven Jay Kropf	1
2010	10	4	Gainesville	Florida	Clifford Louis Miller Jr.	1
2010	10	13	Washington D.C.	Washington D.C.	Unknown	1

Appendix 2 (Continued): The FBI's Cases where zero or one person has been killed

2011	1	5	Omaha	Nebraska	Richard L. Butler Jr.	1
2012	3	8	Pittsburgh	Pennsylvania	John Schick	1
2013	10	21	Sparks	Nevada	Jose Reyes	1
2013	11	1	Los Angeles	California	Paul Anthony Ciancia	1
2013	12	13	Centennial	Colorado	Karl Halverson Pierson	1
2013	12	17	Reno	Nevada	Alan Oliver Frazier	1

NOTES

¹Chengyu Huang and Rujun Wang provided valuable research assistance on this project.

² One of the few publications that didn't make such a link in their headline was *USA Today* (see Leger, 2014).

³ The FBI report notes (p. 5): "Specifically, shootings that resulted from gang or drug violence—pervasive, long-tracked, criminal acts that could also affect the public—were not included in this study. In addition, other gun-related shootings were not included when those incidents appeared generally not to have put others in peril (e.g., the accidental discharge of a firearm in a school building or a person who chose to publicly commit suicide in a parking lot)." The first paper to use this definition was by Lott and Landes (1999, 2000). Lott (2003, 2010) has additional discussions. Some, such as the *New York Times*, refer to the attacks being studied here as "rampage" killings (Fessenden, 2000). Politifact and CNN also define these mass shootings in the same way (see Carroll & O'Connor, 2014; Fantz, Knight, & Wang, 2014).