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UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION

STEVEN RUPP, et al.,

Plaintiffs,

vs.

XAVIER BECERRA, in his official
capacity as Attorney General of the State
of California,

Defendant.

Case No.: 8:17-cv-00746-JLS-JDE

**DECLARATION OF SEAN A.
BRADY IN SUPPORT OF
PLAINTIFFS' MOTION TO
EXCLUDE TESTIMONY OF
DEFENDANT'S EXPERT
WITNESS JOHN J. DONOHUE
UNDER FEDERAL RULE OF
EVIDENCE 702**

Hearing Date: July 5, 2019
Hearing Time: 10:30 a.m.
Judge: Josephine L. Staton
Courtroom: 10A

DECLARATION OF SEAN A. BRADY

I, Sean A. Brady, am an attorney at the law firm Michel & Associates, P.C., attorneys of record for Plaintiffs in this action. I am licensed to practice law before the United States Court for the Central District of California. I have personal knowledge of the facts set forth herein and, if called and sworn as a witness, I could and would testify competently to the truth of the matters set forth herein.

1. On October 25, 2018, Defendant served Plaintiffs with the Expert Report of John J. Donohue. A true and correct copy of Mr. Donohue's expert report, is attached hereto as **Exhibit 1**.

2. On December 6, 2018, I deposed Defendant's expert witness, John J. Donohue. Attached hereto as **Exhibit 2** is a true and correct copy of excerpts from the deposition transcript of John J. Donohue.

I declare under penalty of perjury that the foregoing is true and correct.
Executed within the United States on May 28, 2019.

/s/ Sean A. Brady

Sean A. Brady
Declarant

EXHIBIT 1

THE UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

RUPP, et al.,

Plaintiffs,

v.

**XAVIER BECERRA, in his official
capacity as Attorney General of the
State of California; et al.,**

Defendants.

8:17-cv-00746-JLS-JDE

**EXPERT REPORT OF
JOHN J. DONOHUE**

BACKGROUND AND QUALIFICATIONS

1. I am the C. Wendell and Edith M. Carlsmith Professor of Law at Stanford Law School. (A copy of my complete cv is attached as Exhibit A.) After earning a law degree from Harvard and a Ph.D. in economics from Yale, I have been a member of the legal academy since 1986. I have previously held tenured positions as a chaired professor at both Yale Law School and Northwestern Law School. I have also been a visiting professor at a number of prominent law schools, including Harvard, Yale, the University of Chicago, Cornell, the University of Virginia, Oxford, Toon University (Tokyo), St. Gallens (Switzerland), and Renmin University (Beijing).

2. At Stanford, I regularly teach a course on empirical law and economics issues involving crime and criminal justice, and I have previously taught similar courses at Yale Law School, Tel Aviv University Law School, the Gerzensee Study Center in Switzerland, and St.

Gallen University School of Law in Switzerland. Since gun crime is such an important aspect of American criminal justice, my courses evaluate both the nature of gun regulation in the United States and the impact of gun regulation (or the lack thereof) on crime, which is an important part of my research, about which I have published extensively (as reflected in my c.v.). I have also consistently taught courses on law and statistics for two decades.

3. I am a Research Associate of the National Bureau of Economic Research, and a member of the American Academy of Arts and Sciences. I was a Fellow at the Center for Advanced Studies in Behavioral Sciences in 2000-01 and served as the co-editor (handling empirical articles) of the *American Law and Economics Review* for six years. I have also served as the President of the American Law and Economics Association and as Co-President of the Society of Empirical Legal Studies.

4. I am also a member of the Committee on Law and Justice of the National Research Council (“NRC”), which “reviews, synthesizes, and proposes research related to crime, law enforcement, and the administration of justice, and provides an intellectual resource for federal agencies and private groups.” (See <http://www7.national-academies.org/claj/> online for more information about the NRC.)

5. I filed an expert declaration in each of two cases involving a National Rifle Association (“NRA”) challenge to city restrictions on the possession of large-capacity magazines: *Fyock v. City of Sunnyvale*, United States District Court (N.D. Cal.), January 2014; *Herrera v. San Francisco*, United States District Court (N.D. Cal.), January 2014.

6. I also filed an expert declaration in a case involving an NRA challenge to Maryland’s restrictions on assault weapons and large-capacity magazines: *Tardy v. O’Malley*, United States District Court (District of Maryland), February 2014. I filed an expert declaration,

and provided expert testimony, in response to a motion for a preliminary injunction in a case involving a challenge to New Jersey's restrictions on large-capacity magazines in *Association of New Jersey Rifle & Pistol Clubs, Inc. v. Grewal*, No. 3:18-cv-10507-PGS-LHG (D.N.J.)

7. In all these cases, the relevant gun regulations have (ultimately) been sustained in the relevant federal appellate courts (and in the New Jersey case the requested preliminary injunction to bar the implementation of the ban on high capacity magazines was denied on September 28, 2018).

8. I also filed (June 1, 2017) an expert declaration in a case involving a challenge to California's restrictions on carrying of weapons in public in *Flanagan v. Becerra*, United States District Court (C.D. Cal.), Case No. 2:16-cv-06164-JAK-AS and expert declarations on June 4, 2017 and June 16, 2017 in two separate cases challenging California's ban on the possession of large-capacity magazines: *Duncan v. Becerra*, United States District Court (S.D. Cal.), Case No. 17-cv-1017-BEN-JLB and *Weise v. Becerra*, United States District Court (E.D. Cal.), Case No. 2:17-cv-00903-WBS-KJN.

9. Finally, I recently filed an expert declaration in a case involving a challenge to Vermont's restrictions on large-capacity magazines in *Vermont Federation of Sportsmen's Clubs v. Birmingham*, No. 224-4-18 Wncv (Vermont Superior Court, Washington Unit).

10. I have been retained in this case by the California Attorney General. I am being compensated for my services in this matter at my usual government rate of \$425 per hour for consultation, review of documents, and preparation of my report, and \$850 per hour for deposition.

SUMMARY OF CONCLUSIONS

11. The problem of public mass shootings in the United States is a serious national problem that imposes substantial burdens on the American public far beyond the growing numbers of dead and injured victims that are besieged every year. Since so many of these shootings are committed by previously law-abiding citizens with no basis under current law to prevent them from possessing firearms and since such a large proportion of them die in the course of their deadly massacres, the available public-policy options to address this growing problem are limited. The empirical evidence indicates that efforts to arm the public with increased gun carrying is self-defeating since such measures generate substantial increases in violent crime.¹

12. It is a sound, evidenced-based, and longstanding harm-reducing strategy virtually uniformly embraced throughout the developed world for governments to place constraints on weapons because of the harm that weapons can inflict. Restrictions on weaponry most suitable for battlefield use – such as those prohibited under California’s assault weapons ban -- sit comfortably in this appropriate regulatory approach and can be expected to reduce deaths and injury from gun violence. Indeed, gun massacres fell substantially during the ten years of the federal assault weapons ban, and then rose sharply when the ban was lifted in 2004. FBI data show that the problem of active shooters inflicting mayhem on the public has been rising substantially since the end of the federal assault weapons ban.

¹ See Donohue, John, Abhay Aneja, and Kyle Weber, 2018, “Right-to-Carry Laws and Violent Crime: A Comprehensive Assessment Using Panel Data and a State-Level Synthetic Controls Analysis,” NBER Working Paper w23510, www.nber.org/papers/w23510.

13. One of the factors that led to the selection of assault rifles for use by the U.S. military was that they could generate such devastating and lethal wounds on the battlefield. This very fact underscores why any effort to reduce the death toll and the proliferation of the damaging wounds from mass shootings would seek to remove these weapons from the arsenal available to those who would turn them on the public.

14. Bans on assault weapons have little or no effect on the ability of individuals to possess weapons for self-defense in the home but should have a restraining impact on the effectiveness of those who have the criminal intent to kill as many individuals as possible. The assault weapons ban is thus well-tailored to limit the behavior of criminals engaging in the most dangerous forms of violent criminal behavior, and at the same time is likely to have little or no impact on the defensive capabilities of law-abiding citizens. This is especially true since the banned assault weapons are notably ill-suited for self-defense in the home because of their high penetration capacity, which leads their bullets to easily penetrate walls, thereby endangering other lawful occupants. Moreover, to the extent these weapons impose greater risks to law enforcement, one would expect that their presence would encumber police in ways that would put upward pressure on crime generally.²

15. It is my opinion that if, rather than allowing the federal assault weapons ban to lapse in 2004, the country had moved to a more complete ban, many of the gun tragedies of recent years would have been far less deadly and damaging to countless individuals who have been maimed and injured throughout the United States. California's ban on assault weapons is one tool in the important governmental effort to reduce the likelihood that Californians will be

² *Id.* (discussing the value of police in reducing crime and describing how the proliferation of dangerous weapons impairs police effectiveness).

killed in mass shootings by making it incrementally harder for prospective mass shooters to equip themselves with weapons that are both uniquely appealing to their criminal aspirations as well as uniquely designed to aid in their homicidal rampages.

16. Over the last few decades, the number of households owning firearms has been declining, currently down to about 31 percent of American households. At the same time, the growth in gun purchases reflects the highly concentrated rate of ownership with 20 percent of gunowners now owning 60 percent of the nation's firearms. Presumably, the ownership of assault weapons is at least as concentrated as gun ownership, but the fact that most Americans favor bans on assault weapons underscores the fact that only a relatively small minority of Americans owns these weapons.

17. The current level of assault weapons in circulation in the nation should have no bearing on whether the state of California is able to address the socially damaging and worsening problem of public mass shooting. A federal ban on assault weapons did, and could in the future, greatly curtail the number of assault weapons in circulation. A state's power to protect its citizenry cannot be lost simply because other jurisdictions either fail to take or delay in adopting such protective measures, especially when the threat from failing to act grows worse over time as in the case of public mass shootings.

DISCUSSION

Gun Ownership Is Becoming More Concentrated in a Declining Portion of the Population

18. A discussion of the social science literature concerning gun ownership rates must begin with the General Social Science Survey (GSS), which is an annual survey conducted by the National Opinion Research Center, headquartered at the University of Chicago. The GSS is widely regarded by social science researchers as the most reliable indicator of national social

trends, in part because of its professional implementation of face-to-face interviews using a very large sample size (the latest GSS data comes from 2,867 respondents versus roughly 1000 in a typical telephone survey) with a high response rate (always in excess of 70 percent versus telephone survey responses which have fallen below 10 percent in recent surveys). See Pew Research Center, “Assessing the Representativeness of Public Opinion Surveys,” (May 15, 2012); <http://www.people-press.org/2012/05/15/assessing-the-representativeness-of-public-opinion-surveys/>.

19. GSS data from 2016, the most recent year that data is available, states that 30.8% of American households have at least one gun, and that 20.5% of adults personally own a gun. See Donohue & Rabbani, “Recent Trends in American Gun Prevalence,” (attached as Exhibit B). A carefully executed 2015 national survey showed that 34% of households owned guns, and that ownership of private firearms is highly concentrated among a small percentage of gun owners.³

20. This is a considerable drop from the approximately 50% of United States households with one or more guns in the late 1970s, as reflected in GSS surveys. See Donohue & Rabbani, *supra*. Other national surveys show similar results, such as research by the Pew Research Center and the National Behavioral Risk Factor Surveillance System, which both find a persistent decline in household gun ownership over the past several decades. A recent report from the Pew Research Center states:

The Pew Research Center has tracked gun ownership since 1993, and our surveys largely confirm the General Social Survey trend. In our December 1993 survey, 45% reported having a gun in their household; in early 1994, the GSS found 44% saying they had a gun in their home. A January 2013 Pew Research Center survey found 33% saying they had a

³Azrael et al., “The Stock and Flow of US Firearms: Results from the 2015 National Firearms Survey,” (Russell Sage Foundation J. Soc. Sci., forthcoming (2018) (attached as Exhibit C).

gun, rifle or pistol in their home, as did 34% in the 2012 wave of the General Social Survey.⁴

21. The weight of the survey evidence on gun ownership conducted over time shows that the percentage of households with guns today is lower than it was two decades ago.⁵

22. The evidence that gun ownership is concentrated is strong and uncontradicted. Researchers analyzing the results of a 2015 national survey found that 8% of individual gun owners reported owning ten or more firearms—collectively accounting for 39% of the American gun stock—and that 20% of gun owners, who owned the most guns collectively, possessed about 60% of the nation's guns.⁶ A decade earlier, researchers found a similar pattern: a 2004 survey indicated that 48% of gun owners possessed four or more guns and that the top 20% of firearms owners possessed 65% of all firearms.⁷

23. The FBI publishes records of the number of background checks requested, and such background checks are often initiated pursuant to a desired purchase of firearms. With only a couple of exceptions, the trend has been for the number of background checks conducted to grow every year.⁸ Gun industry trade groups cite increased background checks and an increase

⁴Pew Research Center, "Section 3: Gun Ownership Trends and Demographics," <http://www.people-press.org/2013/03/12/section-3-gun-ownership-trends-and-demographics>.

⁵While the GSS in 2016 put the percentage of American households with guns at less than 31%, the most recent Gallup survey found that 39% of American adults live in a household that contains a gun, and 29% personally own one. There is no consensus about why Gallup's estimates are somewhat higher than those from the more reliable GSS (and Pew) surveys, but it should be noted that the Gallup polls are far smaller surveys based on less reliable telephone interviews with dramatically lower response rates than the GSS. In any event, even the Gallup results confirm the long-term decline in the proportion of American households owning firearms.

⁶See Azrael et al., *supra*.

⁷Hepburn et al., "The US Gun Stock: Results from the 2004 National Firearms Survey," *Injury Prevention* 2007;13:15–19.

⁸See National Instant Criminal Background Check System (NICS) Firearm Checks: Month/Year 2017, available at https://www.fbi.gov/file-repository/nics_firearm_checks_-_month_year.pdf/view.

in collections of the federal excise taxes collected on the sale of firearms and ammunition as reflecting strong demand for firearms.⁹

24. Because reliable social science data shows that the number of households that own guns has likely dropped in recent decades, and certainly has not grown, it seems most likely that robust gun sales can be attributed not to increasingly broad gun ownership but instead largely to purchases of guns by members of households that previously owned guns.

25. While the precise number of American households that own assault weapons nationally is uncertain,¹⁰ it is clear that most gun-owning households do *not* possess these types of weapons.

26. Accordingly, the share of households containing an assault weapon will only be a subset of gun owners. This minority status of assault weapon ownership by household reflects the judgment of most Americans that assault weapons are not important to their self-defense.

27. The limited minority status of assault weapon ownership is also underscored by the large majority of Americans who support bans on assault weapons. This is certainly evident for California where the November 2016 ban on assaults weapons that is attacked in this litigation was approved by an almost 2-1 majority. It is also true nationally. A poll conducted for the *New York Times* from June 17-20, 2016 among a national sample of 1975 registered voters found that 67 percent of Americans favored such a ban. Importantly, the *New York Times* also polled “32 current or retired academics in criminology, public health and law, who have

⁹See, e.g., NRA-ILA, “The Myth Of “Declining” Gun Ownership,” (Jul. 13, 2016), available at <http://dailycaller.com/2016/07/13/the-myth-of-declining-gun-ownership/>.

¹⁰ Kate Irby, “Nobody knows exactly how many assault rifles exist in the U.S. – by design,” *McClatchy*, February 23, 2018, <https://www.mcclatchydc.com/news/nation-world/national/article201882739.html>. References to the number of guns manufactured in or imported into the U.S. can be misleading since they may fail to distinguish between guns provided to the military or guns subsequently transported, legally or illegally, to other countries.

published extensively in peer-reviewed academic journals on gun policy” to ask them what measures would be most effective in dealing with America’s mass shooting problem, and an assault weapons ban was deemed overall by this panel to be the single most effective measure.¹¹

28. Less than a year later, a Pew Research Center survey among 3,930 adults (conducted from March 13-27 and April 4-18, 2017) showed broad opposition to assault weapons across the political spectrum.¹² While overall, 68 percent favored banning assault weapons, even a solid 54 percent of Republicans (or those who lean Republican), as well as an overwhelming 80 percent of Democrats (or those leaning in that direction) did so.¹³ Note that this poll was conducted *prior* to two of the five deadliest mass shootings in modern US history, which occurred in October and November of 2017: “a staggering 58 people were killed and more than 500 were hurt when [Steven Paddock] opened fire on a Las Vegas concert and at least 26 people were killed in a Texas church” only five weeks later.¹⁴

29. The latest Pew survey results released on October 18, 2018 showed that the identical percentage of Americans – 67 percent – favored bans on assault weapons and on high-capacity magazines.¹⁵

¹¹ The list of 32 experts included not only me, but also many strong NRA supporters: Gary Kleck, John Lott, David Kopel, Carlisle E. Moody, and Eugene Volokh. Margot Sanger-Katz And Quoctrung Bui, “How to Reduce Mass Shooting Deaths? Experts Rank Gun Laws,” *New York Times*, October 5, 2017, <https://www.nytimes.com/interactive/2017/10/05/upshot/how-to-reduce-mass-shooting-deaths-experts-say-these-gun-laws-could-help.html>.

¹² Ruth Igielnik and Anna Brown, “Key takeaways on Americans’ views of guns and gun ownership,” Pew Research Center, June 22, 2017, <http://www.pewresearch.org/fact-tank/2017/06/22/key-takeaways-on-americans-views-of-guns-and-gun-ownership/>

¹³ Ryan Struyk, “Here are the gun control policies that majorities in both parties support,” *CNN*, November 6, 2017, <https://www.cnn.com/2017/10/02/politics/bipartisan-gun-control-policies-majorities/index.html>.

¹⁴ *Id.*

¹⁵ Pew Research Center, “Gun Policy Remains Divisive, But Several Proposals Still Draw Bipartisan Support,” October 18, 2018, <http://www.people-press.org/2018/10/18/gun-policy-remains-divisive-but-several-proposals-still-draw-bipartisan-support/>. This survey had 5307 respondents and was conducted from September 24 through October 7, 2018.

Weapons Restrictions Have Historically Followed Growing Criminal Abuse

30. Restrictions on weaponry have historically corresponded with increased use and abuse, rather than with new inventions. This makes sense because it is not necessarily immediately clear when something new is invented whether its widespread use will have an adverse impact on public safety.

31. The first group of state restrictions on weapons deemed inappropriate for civilian use were adopted in the 1920s and 1930s after weapons like the Tommy gun became a preferred weapon for gangsters.¹⁶ More recently, the sharp increases in crime in the 1980s as more powerful weaponry started to proliferate led to a second round of restrictions limiting magazine capacity and banning assault weapons, including the now expired 10 year federal assault weapons ban of 1994-2004.¹⁷ State restrictions continued to be adopted following the expiration of the federal ban, often in response to public mass shootings.

The Devastating Problem of Public Mass Shootings Is Getting Worse

32. Any discussion of assault weapons must address the tragic problem of public mass shootings. While some find comfort that the deaths from mass shootings are only a relatively small portion of the total homicides in the United States, this fact should not obscure that major public mass shootings cause profound damage far beyond the mere body counts of the dead and injured.

33. Public mass shootings are particularly high-visibility events that are quite shocking to the public and unsettling to the sense of public safety. Horrific mass shootings---such as those perpetrated by Adam Lanza at Sandy Hook School, Stephen Paddock in Las

¹⁶ See Robert J. Spitzer, *Gun Law History in the United States and Second Amendment Rights*, 80 Law & Contemp. Probs. 55, 68 (2017).

¹⁷ See 1990 N.J. Sess. Law Serv. 32 (West); Haw. Rev. Stat. Ann § 34–(8); Pub. L. 103–322, § 110103 (Sep. 13, 1994).

Vegas, or by ISIS sympathizers at Inland Regional Center in San Bernardino¹⁸ and at Pulse in Orlando¹⁹-- although small in number compared to the total number of homicides, have generated widespread apprehension and increased demand for effective responses from government. It is abundantly clear that the horrors of a mass shooting such as the killing of 20 students and 6 teachers at Sandy Hook Elementary School in Newtown, Connecticut in December 2012 inflicted psychological distress far beyond the contours of that small community and indeed caused suffering throughout the state and indeed the entire country (and the world).

34. Although the long-term secular trend in overall crime has been benign over the last 25 years, the opposite is true for the trend in public mass shootings. According to a report of the Congressional Research Service, there were an average of 2.7 events public mass shootings per year in the 1980s rising to an average of 4.5 events per year from 2010 to 2013.²⁰

35. Writing in May of this year, Louis Klarevas, an Associate Lecturer of Global Affairs at the University of Massachusetts–Boston, noted:

“Last week's school shooting in Texas marks a new milestone in American history. It's the first time we have ever experienced four gun massacres resulting in double-digit fatalities within a 12-month period.

In October 2017, 58 were killed at a concert in Las Vegas. A month later, 26 were killed at a church in Sutherland Springs, Texas. Earlier this year, 17 people lost their

¹⁸Christine Hauser, San Bernardino Shooting: The Investigation So Far, N.Y. Times (Dec. 4, 2015), <http://www.nytimes.com/2015/12/05/us/san-bernardino-shooting-the-investigation-so-far.html> (on file with the Columbia Law Review) (noting fourteen were killed in December 2015).

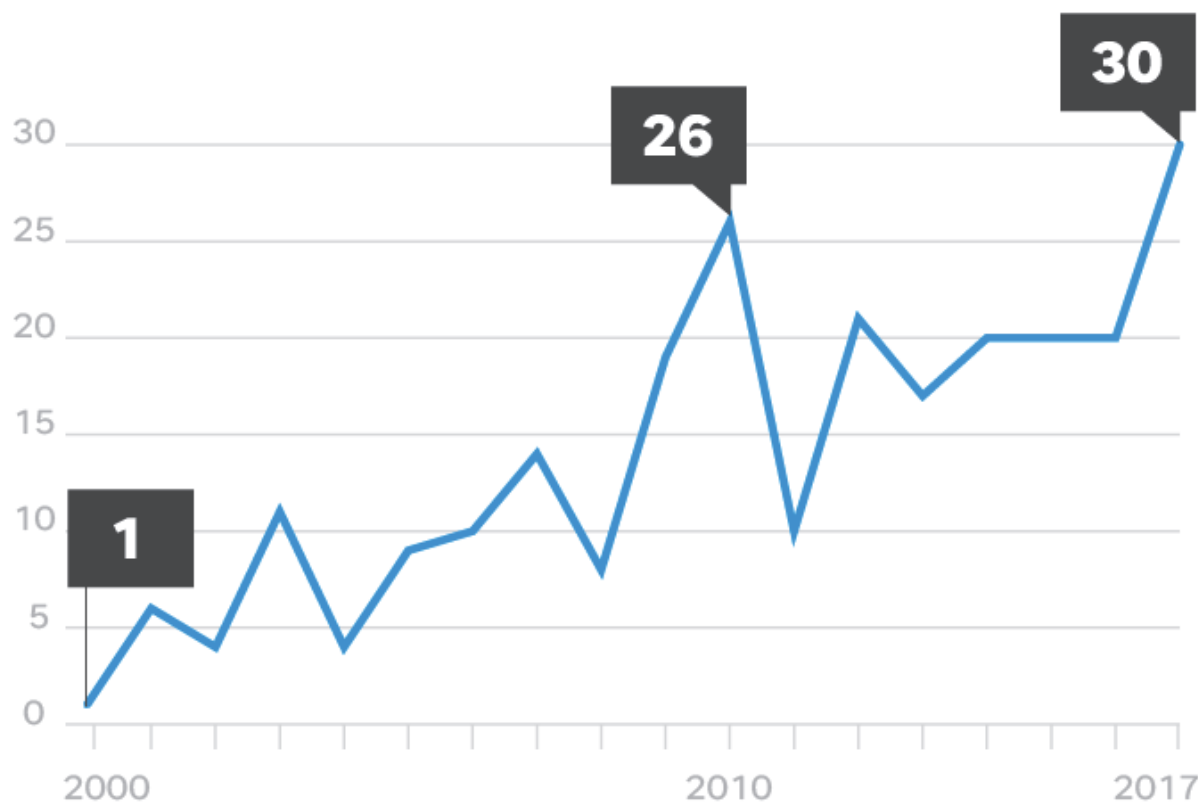
¹⁹Gregor Aisch et al., What Happened Inside the Orlando Nightclub, N.Y. Times (June 12, 2016), <http://www.nytimes.com/interactive/2016/06/12/us/what-happened-at-the-orlando-nightclub-shooting.html> (on file with the Columbia Law Review) (noting a gunman killed forty-nine in a June 2016 attack).

²⁰William J. Krouse & Daniel J. Richardson, Cong. Research Serv., R44126, Mass Murder with Firearms: Incidents and Victims, 1999--2013, at 14--15 (2015), <http://fas.org/sgp/crs/misc/R44126.pdf> [<http://perma.cc/RC4C-SP48>]; Mark Follman, Yes, Mass Shootings Are Occurring More Often, Mother Jones (Oct. 21, 2014, 5:05 am), <http://www.motherjones.com/politics/2014/10/mass-shootings-rising-harvard>

lives at a high school in Parkland, Fl. And to this list we can now add the 10 people who lost their lives at a high school in Santa Fe, Texas.”²¹

36. The latest data from the FBI underscores that the active shooter problem in the United States is growing, as illustrated in the following figure:

Active shooter incidents on the rise, with 2017 topping all years since 2000.



SOURCE FBI data and the FBI's report on active shooter incidents in the United States in 2016 and 2017

<https://www.usatoday.com/story/news/2018/06/20/fbi-most-active-shooters-dont-have-mental-illness-get-guns-legally/718283002/>

²¹Louis Klarevas, “After the Santa Fe massacre, bury the ‘good guy with a gun’ myth: Armed staffers won’t deter shooters or keep kids safe,” *New York Daily News*, May 22, 2018, <http://www.nydailynews.com/opinion/santa-fe-massacre-bury-good-guy-gun-myth-article-1.4003952>

The ominous and steep upward trend in the FBI data charting the growth in active shooter incidents is unmistakable. Not surprisingly, the number of mass shootings clearly is higher following the termination of the federal assault weapons ban in 2004. Indeed, the FBI noted in its 2014 active shooter report that from 2000-2006 there were 6.4 active shooter incidents per year and that from 2007-2013 that number rose to 16.4 per year. The mayhem accelerated in 2014 and 2015, during which 20 incidents occurred each year,²² and jumped further to 25 per year in 2016 and 2017.²³

37. In addition to the well-documented overall increase in public mass shootings in the United States, there has been an equally dramatic rise of these events in school settings.²⁴ Indeed, the authors of a recent study on mass school shootings concludes that “More people have died or been injured in mass school shootings in the US in the past 18 years than in the entire 20th century.”²⁵ The impact of the elevated stress experienced by students and parents across the country as the reality of America’s tragic mass shooting problem penetrates their consciousness is undeniable. While these horrendous gun massacres are relatively rare, each one harms tens of millions if not hundreds of millions beyond those killed or wounded at the scene.

²² FBI, “Active Shooter Incidents in the United States in 2014 and 2015,” file:///Users/jjd/Downloads/ActiveShooterIncidentsUS_2014-2015%20(1).pdf.

²³ FBI, “Active Shooter Incidents in the United States in 2016 and 2017,” <https://www.fbi.gov/file-repository/active-shooter-incidents-us-2016-2017.pdf/view>.

²⁴ Antonis Katsiyannis, Denise K. Whitford, Robin Parks Ennis. Historical Examination of United States Intentional Mass School Shootings in the 20th and 21st Centuries: Implications for Students, Schools, and Society. *Journal of Child and Family Studies*, 2018; DOI: 10.1007/s10826-018-1096-2.

²⁵ Springer. "Rapid rise in mass school shootings in the United States, study shows: Researchers call for action to address worrying increase in the number of mass school shootings in past two decades." ScienceDaily. ScienceDaily, 19 April 2018. <www.sciencedaily.com/releases/2018/04/180419131025.htm>.

38. A considerable scientific literature has documented the significant emotional and mental health harms that mass shootings inflict on survivors, community members, wounded victims, active responders, and children. The consistent finding of these studies is that mass shooting can lead to increased levels of post-traumatic stress disorder (PTSD), anxiety, and depression.²⁶ For example, on February 14, 2008, Steven Kazmierczak opened fire in a crowd of Northern Illinois University students, killing 5 people and wounding 17 more before killing himself. This shooting led to dramatic increases in the levels of post-traumatic stress (PTS) symptoms in a sample of Northern Illinois University students.²⁷

39. Similar findings were reported in a Norway study of survivors of the 2011 Norway shooting, when Anders Breivik killed 67 people and wounded at least 32.²⁸ Four to five months following the shooting, survivors were six times more likely to exhibit elevated PTS symptoms compared to an age- and gender-adjusted sample derived from the overall population.

²⁶ Shultz, James M., Siri Thoresen, Brian W. Flynn, et al. 2014. "Multiple Vantage Points on the Mental Health Effects of Mass Shootings." *Current Psychiatry Reports*. 16:469. To complete this meta-analysis of the scientific literature from 2010 to early 2014, the authors searched the PUBMED, SCOPUS, PILOTS, PSYCINFO, and CINAHL databases using combinations of terms for mass shooting incidents with MeSH (Medical Subject Heading) vocabulary on mental health.

²⁷ Bardeen, Joseph R., Mandy J. Jumpula, and Holly K. Orcutt. 2013. "Emotional regulation difficulties as a prospective predictors of posttraumatic stress symptoms following a mass shooting." *Journal of Anxiety Disorders* 27, no.2 (March): 188-196. This longitudinal study assessed the presence of PTS symptoms in a sample of female undergraduates at Northern Illinois University at three time points: T1, the starting period (pre-shooting) (n=1,045), T2, short term post-shooting (17-100 days post-shooting, n=691), and T3, roughly 7-8 months post-shooting (n=588). In the sample of 691 students that were assessed at T1 and T2, clinically significant levels of PTS rose from 20% pre-shooting to almost 50% post-shooting.

²⁸ Dyb, Grete, Tine K. Jensen, Egil Nygaard, et al. 2014. "Post-traumatic stress reactions in survivors of the 2011 massacre on Utoya Island, Norway." *The British Journal of Psychiatry* 204, no. 5 (May): 361-367. Of the 490 survivors from the Utoya shooting invited to participate in the study, 325 agreed. Semi-structured face-to-face interviews were conducted by health personnel approximately 4-5 months after the shooting.

More generally, survivors of serious gunshot injuries and multiple victim incidents involving intentionally inflicted harm are at higher risk of experiencing PTS symptoms.²⁹

40. Shultz et al. (2014) report that those who have experienced previous trauma or psychological disorders are especially vulnerable to potential mental health problems after a mass shooting.³⁰ Children are more susceptible to experiencing symptoms of PTS following a mass shooting. For example, Elklit and Kurdahl (2013) found that seven months after a mass public shooting at a Danish high school, 35% of students reported PTS symptoms and 7% had PTSD.³¹

²⁹ Greenspan, Arlene I., and Arthur L. Kellerman. 2002. "Physical and Psychological Outcomes 8 Months After Serious Gunshot Injury." *The Journal of Trauma: Injury, Infection and Critical Care* 53, no.4 (Oct): 709-716. This study interviewed 60 patients who were admitted to a Level 1 trauma center for firearm-related injuries, first, at the time of their hospitalization, and second, 8 months after they were discharged. Most respondents indicated symptoms of PTS 8-months post-discharge, with 39% reporting severe symptoms of intrusion and 42% reporting severe avoidance behaviors.

Santiago, Patcho N., Robert J. Ursano, Christine L. Gray, et al. 2013. "A Systematic Review of PTSD Prevalence and Trajectories in DSM-5 Defined Trauma Exposed Populations: Intentional and Non-Intentional Traumatic Events." *PLoS One* 8, no. 4 (April). The authors identified 2,537 articles published from January 1, 1998 to December 31, 2010 and covering longitudinal studies of directly exposed trauma populations. Of these articles, they closely surveyed 58 articles that met the DSM-5 definition of having experienced a traumatic event and assessed PTSD symptoms at two or more time points within a 12-month window. The authors found that in the 5 studies with sufficient data, a median of 37.5% of individuals exposed to intentional traumatic events developed PTSD.

³⁰ Bardeen, Joseph R., Mandy J. Jumpula, and Holly K. Orcutt. 2013. "Emotion regulation difficulties as a prospective predictors of posttraumatic stress symptoms following a mass shooting." *Journal of Anxiety Disorders* 27, no.2 (March): 188-196. (See fn 25 for description of study). Littleton, Heather, Amie E. Grills-Tauchel, Danny Axsom, et al. 2012. "Prior Sexual Trauma and Adjustment Following the Virginia Tech Campus Shooting: Examination of the Mediating Role of Schemas." *Journal of Psychological Trauma* 4, no.6 (Nov): 579-586. This study had interviewed 215 Virginia Tech college women prior to the school's mass shooting and then followed up with them two months and then one year after the shooting. The authors compared the post-shooting PTSD and depression symptoms of women with and without a history of sexual trauma. The authors found that women who had experienced sexual trauma reported significantly higher levels of depression ($p=0.006$) and shooting-related PTSD symptoms ($p=0.04$) in the post-shooting interview.

³¹ Elklit, Ask, and Sessel Kurdahl. 2013. "The psychological reactions after witnessing a

41. In addition to the effects on victims and survivors of mass shootings, the surrounding community can be strongly negatively affected. The most important study of this phenomenon, following the Breivik shooting in Norway, found measurable increases in stress reactions in the general population, with the effects especially strong for young people with a prior history of trauma.³²

What Public Policy Measures Can Address This Growing Menace?

42. In response to the growing list of gun tragedies, President Obama signed into law in 2013 the Investigative Assistance for Violent Crimes Act of 2012, which granted authority to the U.S. Attorney General to assist in the investigation of “violent acts and shootings occurring in a place of public use” and in the investigation of “mass killings and attempted mass killings.”³³

killing in public in a Danish high school.” *European Journal of Traumatology* 4, (Jan). Seven months after the mass public shooting, researchers administered the Harvard Trauma Questionnaire to Danish students in the second and third grade of high school (this is roughly equivalent to the final two years of high school in the US system). The questionnaire was also mailed to parents’ addresses of students who had graduated in June. Of the 415 students enrolled at the time of the shooting, 320 students returned the questionnaire.

³² Thoresen, Siri, Helene Flood Aakvaag, Tore Wentzel-Larsen, et al. 2012. “The day Norway cried: Proximity and distress in Norwegian citizens following, 22nd July 2011 terrorist attacks in Oslo and on Utoya Island.” *European Journal of Traumatology* 3, (Nov). The study drew a representative sample from the Norwegian Population Registry. A total of 465 individuals living in Oslo and 716 individuals living in other parts of Norway were interviewed over the phone 4-5 months after the Breivik attacks. Nordanger, Dag, Kyrre Breivik, Bente Storm Haugland, et al. 2014. “Prior adversities predict posttraumatic stress reactions in adolescents following the Oslo terror events 2011.” *European Journal of Traumatology* 5, (May). The study was based on a survey of 10,220 Norwegian high school students that was conducted 7 months after the Oslo and Utoya terrorist attacks. It collected information both on adverse life experiences (e.g. exposure to sexual trauma, violence, etc.) and the exposure and reactions to the Breivik attacks.

³³ Blair, J. Pete, and Schweit, Katherine W. (2014). “A Study of Active Shooter Incidents, 2000 - 2013.” Texas State University and Federal Bureau of Investigation, U.S. Department of Justice, Washington D.C. 2014, at 4.

43. To better understand the nature of these threats, the Federal Bureau of Investigation (FBI) in 2014 initiated a study of “active shooter” incidents designed to identify the prevalence of and trend in these events, how they unfolded, what brought them to an end, and other details that would be of assistance to law enforcement (Id.).³⁴

44. The FBI’s analysis of active shooters over age 18 found that 65 percent had no adult convictions prior to the active shooting event.³⁵ In other words, most active shooters are “law-abiding citizens” in the jargon of the complaint in this case – until they launch their untended homicidal rampages. Moreover, the FBI report found that only a tiny fraction would have qualified as “adjudicated mental defectives” that would have been barred from possessing weapons.³⁶ In other words, the lack of a basis for prohibiting gun ownership under current law for most active shooters means that tighter background checks would not have likely blocked their homicidal objectives.

45. Nor can we hope to limit these horrific crimes by simply increasing the penalties on mass shooters or elevating the probability of apprehension once their crime is completed since almost all mass killers are either captured, commit suicide, or are killed at the scene.³⁷

46. Indeed, it was the availability of weapons to these individuals that enabled them to initiate such deadly attacks. Note the contrast of a school attack in China that occurred only

³⁴ Note that if an active shooter bent on inflicting widespread casualties is stopped quickly enough, this incident would not appear in a count of “public mass shootings” that required, say, at least four individuals to be shot and killed, not counting the shooter (which is a standard, although not the only, definition of a mass shooting).

³⁵ Silver, J., Simons, A., & Craun, S. (2018). A Study of the Pre-Attack Behaviors of Active Shooters in the United States Between 2000 – 2013. Federal Bureau of Investigation, U.S. Department of Justice, Washington, D.C. 20535.

³⁶ The Gun Control Act of 1968 prohibits gun possession by felons and adjudicated “mental defectives” (18 U.S.C. §922 (d) (4) 2016).

³⁷ According to the FBI, in 156 of the 160 episodes, the mass shooter was either captured, committed suicide (64 cases), or was killed (30 cases). Blair, J. Pete, and Schweit, Katherine W. (2014). “A Study of Active Shooter Incidents, 2000 - 2013.” Texas State University and Federal Bureau of Investigation, U.S. Department of Justice, Washington D.C. 2014.

hours before Adam Lanza used an assault weapon armed with 30 round magazines to kill 26: while 22 children and an adult were injured in the attack in China, no one died – because the killer used a knife.³⁸ In light of this and the limited other public policy options designed to curtail the death and injury toll from public mass shootings, an important tool in trying to reduce the harm these mass killers can commit is to reduce the destructive power of the weaponry that they already have or can acquire through purchase or theft, which is the central goal of California’s ban on assault weapons and high capacity magazines.

47. A common refrain from the gun industry is that by promoting gun sales and gun carrying, one might curtail the mayhem in a mass shooting as a law-abiding gun carrier could quickly end the unfolding crime. There are two problems with this prescription. First, stopping a mass shooting is a perilous endeavor and untrained individuals likely added more to the mayhem than they have been able to curtail. Second, the best evidence suggests that increased gun carrying in the population leads to higher rates of violent crime, so the alleged remedy to the problem of mass shootings comes at a very steep price. These points are spelled out in detail in my work estimating the impact of laws allowing citizens to carry concealed handguns on crime.³⁹

48. Even well-intentioned interventions by permit holders intending to stop a crime have elevated the crime count when they ended with the permit holder either being killed by the criminal or shooting an innocent party by mistake. Indeed, an FBI study of 160 active shooter incidents found that in almost half (21 of 45) of the situations in which police engaged the

³⁸ Mallory Ortberg, “Man Arrested in China After Knife Attack on Students,” <http://gawker.com/5968740/man-arrested-in-china-after-knife-attack-on-students>.

³⁹ Donohue, John, Abhay Aneja, and Kyle Weber, 2018, “Right-to-Carry Laws and Violent Crime: A Comprehensive Assessment Using Panel Data and a State-Level Synthetic Controls Analysis,” NBER Working Paper w23510, www.nber.org/papers/w23510.

shooter to end the threat, law enforcement suffered casualties, totaling nine killed and 28 wounded. One would assume the danger to an untrained permit holder trying to confront an active shooter would be greater than that of a trained professional, which may in part explain why effective intervention in such cases by permit holders to thwart crime is so rare. While the same FBI report found that in 21 of a total of 160 active shooter incidents between 2000 and 2013, “the situation ended after unarmed citizens safely and successfully restrained the shooter,” there was only one case – in a bar in Winnemucca, Nevada in 2008 – in which a private citizen other than an armed security guard stopped a shooter, and that individual was an active-duty Marine.⁴⁰

49. Moreover, the notion of arming the populace to stop public mass shootings must contend with the consequences of increasing gun carrying. Here the best evidence shows that the increased gun carrying that follows from state adoption of right-to-carry laws leads to increases in violent crime of from 13-15 percent over the ensuing ten years. In other words, any attempt to curtail public mass shootings with more gun carrying will result in an array of unforeseen and unwanted consequences ranging from more gun thefts and added burdens on law enforcement to more unlawful use of weapons that on balance increases violent crime substantially.⁴¹

Banning Assault Weapons Should Save Lives and Reduce Injuries

50. With only 5 percent of the world’s population, the U.S. has roughly one-third of the public mass shootings across 171 countries since the late 1960s.⁴² It is widely recognized

⁴⁰ See, Id. at 8 for the details on these issues.

⁴¹ Id.

⁴² Lankford, Adam, “Public Mass Shooters and Firearms: A Cross-National Study of 171 Countries,” *Violence and Victims*, Vol 31, Issue 2, DOI: 10.1891/0886-6708.VV-D-15-00093, <http://connect.springerpub.com/content/sgrvv/31/2/187>.

that gun control can limit the extent of gun violence, and a variety of measures have been adopted throughout the developed world, including efforts to restrict who has access to weapons and where they may be carried and to restrict the types of guns in circulation and the size of ammunition magazines. As two political scientists explain, there are two primary rationales behind such measures: “One, they make it less likely that someone intent on violence will be able to get a gun. And two, by making the weapon less deadly, gun control laws reduce the danger that the victim of a gun attack will die.”⁴³

51. California adopted the restrictions at issue in this litigation in pursuit of this public safety rationale. California SB 880, which was signed into law on July 1, 2016, expanded the definition of "assault weapons" under Cal. Penal Code § 30515. The objective of the legislation is demonstrated by the attributes of the banned weapons. For example, § 30515(a)(1) identifies certain problematic attributes of rifles with detachable magazines:

- (A) A pistol grip that protrudes conspicuously beneath the action of the weapon.
- (B) A thumbhole stock.
- (C) A folding or telescoping stock.
- (D) A grenade launcher or flare launcher.
- (E) A flash suppressor.
- (F) A forward pistol grip.

52. The goal behind the delineation of these problematic attributes is to reduce the prevalence of weapons that will be most effective for committing mass murder or the type of rapid, sustained deadly fire that would be most advantageous for criminal purposes. As Senator Mark Warner notes in referring to a proposed federal assault weapons ban, we must “recognize that the features and tactical accessories that define assault weapons under this legislation were

⁴³Jonathan Spiegler and Jacob Smith, “More mental health care alone will not stop gun violence,” *The Conversation*, June 19, 2018. <https://theconversation.com/more-mental-health-care-alone-will-not-stop-gun-violence-94201>

designed for a specific purpose — to give soldiers an advantage over the enemy, not to mow down students in school hallways.”⁴⁴

53. Rifles that incorporate military-style features add to their capacity to enhance the death toll in a public mass shooting event: pistol grips and thumbhole stocks enable easier spray-firing; a collapsible or folding stock allows the weapon to be shortened and more easily concealed;⁴⁵ and a flash suppressor shields the shooter from blinding muzzle flashes during sustained rapid fire.⁴⁶ As a consequence, these attributes make these weapons particularly appealing to mass shooters, drug traffickers, and people who may want to exchange fire with law enforcement.⁴⁷

54. Assault weapons, at least of the long gun variety, tend to have higher muzzle velocities than, for instance, handguns.⁴⁸ They also tend to utilize .223 rounds, which are designed to fragment and mushroom in a person’s body.⁴⁹ These two factors in conjunction mean

⁴⁴ Mark Warner, “I voted against an assault weapons ban. Here’s why I changed my mind,” *The Washington Post*, October 1, 2018, https://www.washingtonpost.com/opinions/i-voted-against-an-assault-weapons-ban-heres-why-i-changed-my-mind/2018/10/01/3bfa76a0-c594-11e8-9b1c-a90f1daae309_story.html?noredirect=on&utm_term=.cc81495be426

⁴⁵ Erica Goodejan, “Even Defining ‘Assault Rifles’ Is Complicated,” *The New York Times* January 16, 2013, <https://www.nytimes.com/2013/01/17/us/even-defining-assault-weapons-is-complicated.html>.

⁴⁶ See *Rovella Aff.* ¶¶ 34-38, *Shew v. Malloy*, 994 F. Supp. 2d 234 (D. Conn. 2014), *aff’d in part, rev’d in part sub nom. New York State Rifle & Pistol Ass’n, Inc. v. Cuomo*, 804 F.3d 242 (2d Cir. 2015); H.R. Rep. No. 103-489 (1994) at 18-19.

⁴⁷ See H.R. Rep. No. 103-489 (1994) at 14-16; Brady Center to Prevent Gun Violence, *Assault Weapons: Mass Produced Mayhem*, October 7, 2008, available at <http://www.bradycampaign.org/resources/assault-weapons-mass-produced-mayhem> (last visited Oct. 12, 2018) at 3; Batts Decl. ¶¶ 33, *Kolbe v. O’Malley*, 42 F. Supp. 3d 768 (D. Md. 2014), *aff’d in part, vacated in part, remanded sub nom. Kolbe v. Hogan*, 813 F.3d 160 (4th Cir. 2016), *on reh’g en banc*, 849 F.3d 114 (4th Cir. 2017), and *aff’d sub nom. Kolbe v. Hogan*, 849 F.3d 114 (4th Cir. 2017).

⁴⁸ See Defts’ Stmt. Docket Entry 63 ¶¶ 44-45, 58-59, 61, 64-65, *Worman v. Healey*, 1-17-CV-10107, 293 F. Supp. 3d 251 (D. Mass. 2018).

⁴⁹ See Batts Decl. ¶¶ 44-45, *Kolbe v. O’Malley*, 42 F. Supp. 3d 768 (D. Md. 2014), *aff’d in part, vacated in part, remanded sub nom. Kolbe v. Hogan*, 813 F.3d 160 (4th Cir. 2016), *on reh’g*

that injuries from being shot by assault weapons tend to cause more complex damage to the body in ways that make these wounds more dangerous in both the short and long term.⁵⁰

55. Indeed, the experience from before, during, and after the ten-year period from 1994-2004 when the federal assault weapons ban was in effect provides important evidence that this federal law saved lives and reduced the mayhem from the deadliest mass shootings.

56. Louis Klarevas, the author of *Rampage Nation: Securing America from Mass Shootings* (Amherst, NY: Prometheus 2016), has illustrated in his graphic (reproduced below) that the federal assault weapons ban appears to have been quite successful in limiting the most deadly mass shootings. Examining gun massacres in which at least six were killed, Klarevas found that, from 1994-2004, there were only 12 such incidents – slightly over one per year – resulting in 89 deaths. In the following decade, when the federal assault weapons ban was no longer in place, there was a dramatic surge in both the number of gun massacres and the total death toll: From 2004-2014, the number of gun massacres rose from 12 to 34 and the number of gun deaths jumped from 89 to 302. Moreover, the dramatic jump in gun massacres in the ten years following the end of the assault weapons ban is in contrast to the downward drift in overall crime over this period, which further buttresses the link between the proliferation of assault weapons following the lapse in the federal assault weapon ban and the increased number of gun massacres. As the following figure shows, when one compares the ten years prior to the federal assault weapons ban to the ten years under that ban, we see a 37 percent drop in the number of gun massacres (from 19 down to 12) and 43 percent drop in the number of fatalities (falling from

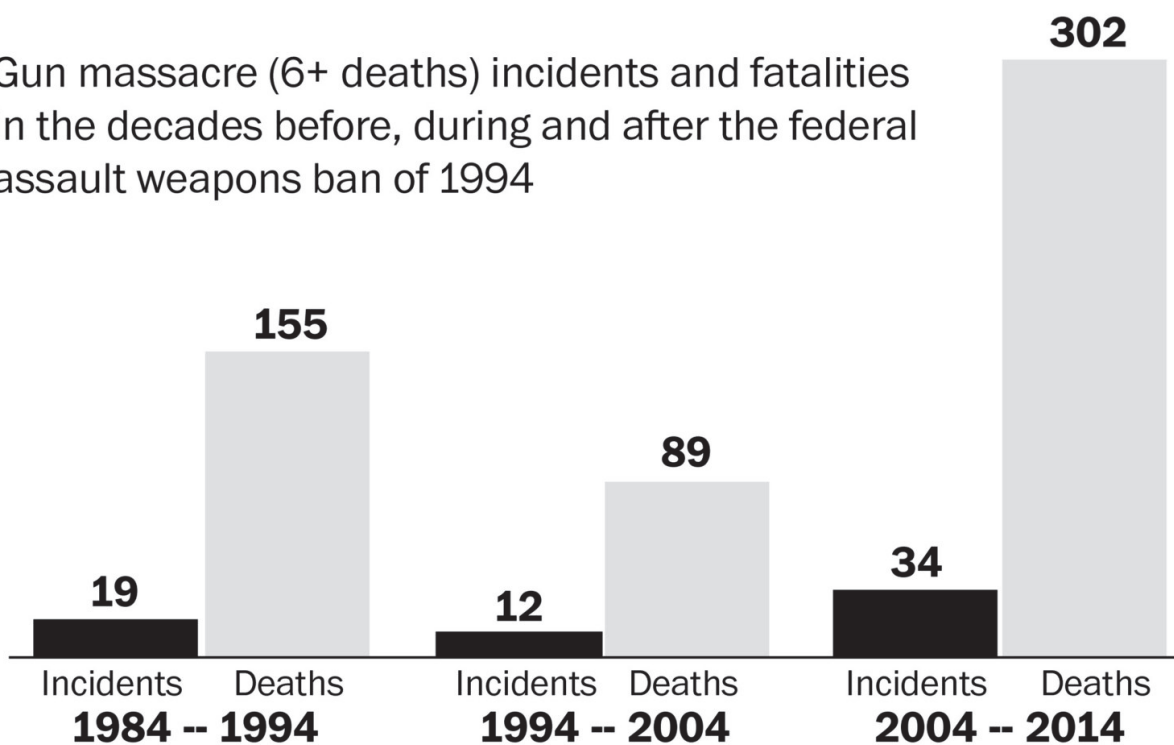
en banc, 849 F.3d 114 (4th Cir. 2017), and *aff'd sub nom. Kolbe v. Hogan*, 849 F.3d 114 (4th Cir. 2017); *Rovella Aff.* ¶¶ 39, *Shew v. Malloy*, 994 F. Supp. 2d 234 (D. Conn. 2014), *aff'd in part, rev'd in part sub nom. New York State Rifle & Pistol Ass'n, Inc. v. Cuomo*, 804 F.3d 242 (2d Cir. 2015); Duncan Long, *The Complete AR-15/M16 Sourcebook* (2d ed.), 2001 at 50; Colwell Decl. at 2-4, *Worman v. Healey*, 293 F. Supp. 3d 251 (D. Mass. 2018)

⁵⁰ See Colwell Decl. at 3, *Worman v. Healey*, 293 F. Supp. 3d 251 (D. Mass. 2018)

155 to 89) during the years the federal assault weapons ban was in effect. When the ban ended, gun massacres skyrocketed by more than 183 percent in the following decade (from 12 to 34) and the number of fatalities rose by more than 239 percent (from 89 to 302). Of course, the problem of public mass shootings has only been getting worse since 2014, underscoring the need for governmental action to address this serious menace.

Gun massacres fell during the assault weapons ban

Gun massacre (6+ deaths) incidents and fatalities in the decades before, during and after the federal assault weapons ban of 1994



Source: Louis Klarevas
THE WASHINGTON POST

57. The dramatic increases in gun massacre incidents and fatalities closely tracks the growth in U.S. sales of assault weapons that was ignited by the expiration of the federal assault-weapons ban in 2004, the removal of potential liability on the part of gun merchants, and intense advertising of the militarized upgrades, ranging from high-capacity magazines to flash

suppressors, that stimulated the demand for this highly dangerous consumer product. Josh Sugarmann, executive director of the Violence Policy Center, notes that “The end of the assault-weapons ban allowed for the customization and modification of these weapons to make them look even more militaristic, even more grand in the eyes of their owners.”⁵¹

58. A year after the lapsing of the federal assault weapons ban, the Protection of Lawful Commerce in Arms Act (PLCAA) was passed, which provided gun manufacturers with near-blanket immunity from suits based on the criminal misuse of their products. This emboldened a torrent of consumer advertising designed to highlight the battlefield appeal of modern assault weapons, and sales soared in response. The dramatic rises in gun massacres followed.

59. These advertising campaigns reveal exactly how the gun industry sought to market assault weapons: they are hawked with explicit depictions of combat and phrases like “The closest you can get without having to enlist.”⁵²

60. Unsurprisingly, a growing number of mass killers – including terrorists like the San Bernardino shooters – turn to these assault rifles when they launch their deadly onslaughts. Moreover, an industry survey of civilian assault-rifle ownership “reveals that the average civilian assault-rifle owner keeps a small arsenal, owning three or more of the guns; 27 percent of owners have bought four or more. [Unfortunately,] many civilian assault-rifle owners fail to secure their arms; nearly one owner in five does not lock up his rifle, and more than 30 percent take no care

⁵¹ Quoted in Tim Dickinson, “All-American Killer: How the AR-15 Became Mass Shooters’ Weapon of Choice,” *Rolling Stone*, February 22, 2018, <https://www.rollingstone.com/politics/politics-features/all-american-killer-how-the-ar-15-became-mass-shooters-weapon-of-choice-107819/>

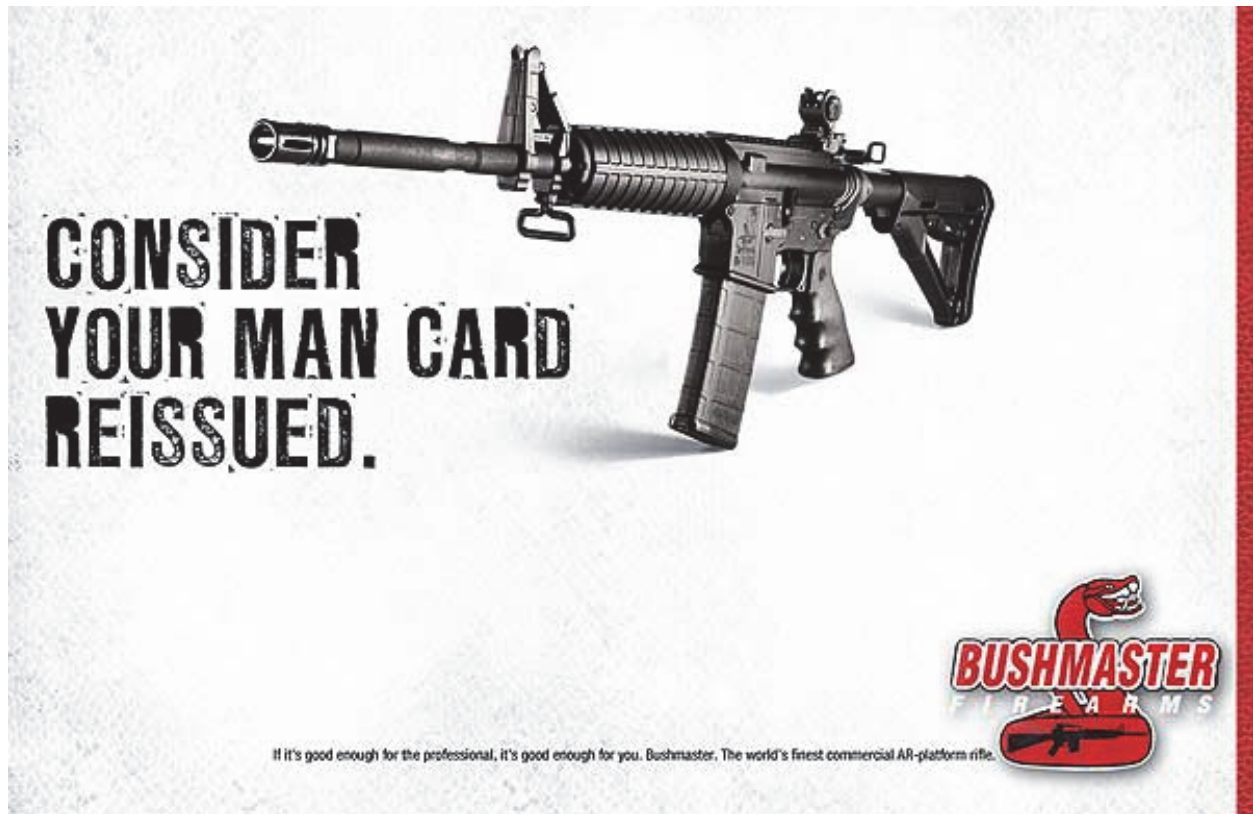
⁵² Id.

to secure their ammunition.”⁵³ In other words, a very substantial fraction of owners of assault rifles act irresponsibly, thereby exposing their weapons to loss or theft and resulting criminal misuse. For example, the weapons used by Adam Lanza to kill his mother, Nancy Lanza, and in the Newtown shooting were owned by his mother.

61. Indeed, the makers of the Bushmaster assault rifle Nancy Lanza owned and that her son Adam Lanza used in Newtown was sold under the slogan “Forces of opposition, bow down.” While such weapons are designed for and appropriately used by trained military personnel and law enforcement, they are exceedingly dangerous when wielded by mentally unstable civilians.

62. While the United States does not have a higher rate of mental illness than other advanced industrialized nations, it certainly has a higher rate of public mass shootings. This is in part because young men are saturated in a gun culture created by advertising designed to exploit their weaknesses. Consider the following Bushmaster advertisement for the gun that Adam Lanza used, and imagine the impact it could have on someone struggling with his substantial mental health problems:

⁵³ The NSSF periodically conducts research on civilian assault rifles intended for gun sellers, and these figures are from their latest survey. Tim Dickinson, “All-American Killer: How the AR-15 Became Mass Shooters’ Weapon of Choice,” *Rolling Stone*, February 22, 2018, <https://www.rollingstone.com/politics/politics-features/all-american-killer-how-the-ar-15-became-mass-shooters-weapon-of-choice-107819/>



63. Notably, while Lanza used a Savage Mark II bolt-action .22-caliber rifle to kill his sleeping mother, he chose the much more dangerous Bushmaster assault weapon with 30-round magazines that enabled him to fire 154 bullets over the 264 seconds in his lethal rampage at Sandy Hook School.⁵⁴ We will never know if the assault weapon dangled before him in luring advertisements had never been available whether Lanza would have concocted his same deadly plan, but we do know if he had only a bolt action hunting rifle with a ten round magazine he could not have fired as many bullets and many lives would have been spared.

64. The impact of the gun industry's efforts to exploit messages directed at those with deep insecurities and even mental health issues showed up in another recent mass shooting.

⁵⁴ Coalition to Stop Gun Violence, "What Adam Lanza Took, and Didn't Take, to Sandy Hook Elementary," <https://www.csgv.org/adam-lanza-took-didnt-take-sandy-hook-elementary/> (last visited on October 22, 2018).



65. The nineteen-year old killer of 17 at Parkland High School (on February 14, 2018) was moved to post the above NRA image on his Instagram account. He stated in a recording that he had had enough of being told what to do and was tired of being called “an idiot.” “I am nothing. I am no one, my life is nothing and meaningless. With the power of the A.R., you will know who I am.”

66. Of course, banning assault weapons does not eliminate the threat from troubled individuals, but since these weapons are particularly attractive to troubled potential mass killers and specifically designed to facilitate the most rapid and effective annihilation of all intended targets, bans on assault weapons is not only prudent but indeed indispensable in any governmental effort designed to reduce the mass shooting problem in America. A brief discussion of how and why the AR-15 came to be chosen as the primary military combat weapon used by the U.S. in Vietnam explains why.

67.

The Army Adopts the AR-15 for Battlefield Use

68. In 1957, the Army invited Armalite's chief gun designer, Eugene Stoner, to produce a lightweight, high-velocity rifle, that could operate in both semi- and full-automatic modes with firepower capable "of penetrating a steel helmet or standard body armor at 500 yards." Stoner devised the AR-15 to meet these specifications. The Advanced Research Projects Agency (ARPA) –today known as DARPA – was so impressed with the AR-15's value as a combat weapon that it pushed to have 1,000 rifles shipped for use by South Vietnamese troops and their American special-forces trainers in 1961.

69. The performance of this new assault weapon was assessed in a confidential ARPA report in July 1962, stating "The AR-15 Armalite rifle has been subjected to a comprehensive field evaluation under combat conditions in Vietnam."⁵⁵ The report noted that "The lethality of the AR-15 and its reliability record were particularly impressive." *Id.* at 15. The wounds generated by this weapon were prodigious:

"At a distance of approximately 15 meters, one Ranger fired an AR-15 full automatic hitting one VC [(Viet Cong)] with 3 rounds [of Caliber .223] with the first burst. One round in the head-took it completely off. Another in the right arm, took it completely off, too. One round hit him in the right side, causing a hole about five inches in diameter. It cannot be determined which round killed the VC but it can be assumed that *any one of the three would have caused death.*" *Id.* at 22 (emphasis added).

70. The report enumerated the wounds in a Ranger ambush of a Viet Cong position, including: a back wound that "caused the thoracic cavity to explode"; a buttock wound that "destroyed all tissue of both buttocks"; and finally "a heel wound," where "the projectile entered

⁵⁵ Advanced Research Projects Agency, Office of the Secretary of Defense, *Field Test Report, AR-15 Armalite Rifle*, at 4 (July 31, 1962,). Retrieved October 12, 2018 from <http://www.dtic.mil/dtic/tr/fulltext/u2/343778.pdf>

the bottom of the right foot causing the leg to split from the foot to the hip.” All the deaths were “instantaneous,” “except the buttock wound. He lived approximately five minutes.”⁵⁶

71. The “phenomenal lethality” of the AR-15 described by ARPA led the Army in December 1963 to adopt the AR-15 – rebranding it the M16.

72. Of course, the civilian AR-15 lacks the fully automatic (and burst) mode of the M16, but it still retains all the other aspects that made it such a valuable lethal weapon for deadly combat. In fact, the Army’s own Field Manual states that semi-automatic fire is the “most important firing technique during fast-moving, modern combat,” noting, “It is surprising how devastatingly accurate rapid semi-automatic fire can be.”⁵⁷ In other words, saying that this semi-automatic assault weapon is not a weapon of war because it doesn’t have fully automatic capacity is like saying that a conventional bomber is not a war plane because it isn’t carrying a nuclear payload. Indeed, the ability to convert a civilian AR-15 into a fully automatic weapon – or the near fully-automatic capacity that Stephen Paddock used in the Las Vegas shooting of a year ago – is yet an additional factor that renders it unusually dangerous.

73. According to one of its designers, the AR-15 assault rifle was originally engineered to generate “maximum wound effect.” “It’s a perfect killing machine,” says Dr. Peter Rhee, a trauma surgeon and retired Navy captain.⁵⁸

74. Rhee was the doctor who saved the life of Arizona Rep. Gabby Giffords after she was shot in the head with a handgun fired during a mass shooting in 2011. According to Rhee:

⁵⁶ Tim Dickinson, “All-American Killer: How the AR-15 Became Mass Shooters’ Weapon of Choice,” *Rolling Stone*, February 22, 2018, <https://www.rollingstone.com/politics/politics-features/all-american-killer-how-the-ar-15-became-mass-shooters-weapon-of-choice-107819/>

⁵⁷ Id.

⁵⁸ Tim Dickinson, “All-American Killer: How the AR-15 Became Mass Shooters’ Weapon of Choice,” *Rolling Stone*, February 22, 2018, <https://www.rollingstone.com/politics/politics-features/all-american-killer-how-the-ar-15-became-mass-shooters-weapon-of-choice-107819/>

“A handgun [wound] is simply a stabbing with a bullet. It goes in like a nail. [But with the AR-15,] it’s as if you shot somebody with a Coke can.”

The Allure of and Value to Mass Shooters of Assault Weapons

75. It is not surprising that mass shooters employing these particularly lethal weapons are able to kill so many so quickly: Adam Lanza was able to slaughter 26 in less than five minutes with his Bushmaster AR-15. James Holmes used a Smith & Wesson “Military & Police” (M&P) AR-15 fitted with a 100-round magazine to kill 12 and wound 58 movie theater. The ISIS-inspired San Bernardino, California, shooters used a pair of AR-15s to kill 14. Orlando shooter Omar Mateen unleashed Sig Sauer’s concealable “next-generation AR” to leave 49 dead and dozens more injured at the Pulse nightclub.

76. Moreover, there is not the slightest evidence that the federal restrictions on assault weapons that was enacted in 1994 (and lapsed ten years later) compromised the safety of law-abiding citizens. Since these weapons are useful for those bent on mass killing, further limiting their availability should have a beneficial effect on the active shooter and mass shooting problems that are serious and worsening in the United States.

77. It should be noted that even if an assault weapons ban failed to reduce the overall criminal use of guns, it can be expected to reduce the overall death toll from the criminal use of guns.

78. As noted above, Adam Lanza was able to kill more because he was using a lawfully purchased assault weapon equipped with a 30-round large-capacity magazine. Telling us that Nancy Lanza was a law-abiding citizen so there would be no reason to deprive her of the right to buy an assault weapon entirely misses the point of the benefit of an assault weapons ban: it was the weaponry of a totally law-abiding citizen that paved the way not only to her own death

but also directly led to horrific slaughter of 20 first-grade students and six adults. Law abiding citizens can and do themselves cross over the line into criminal misconduct but also facilitate and enable others to engage in deadly misconduct when they make their guns available to others through loss or theft. In other words, the assault weapons ban is designed precisely to save lives and by raising the costs for killers, it would be expected to advance that goal.

79. On November 5, 2009, Nidal Hasan killed 13 and injured more than 30 others at Fort Hood, near Killeen, Texas. When Hasan purchased his killing arsenal, he asked for "the most technologically advanced weapon on the market and the one with the highest standard magazine capacity."⁵⁹ Searching for the deadliest assault weapon is exactly what one would do if one wanted to simply kill as many people as possible in the shortest amount of time. If one is serious about stopping mass killings, a good first step is to deprive such killers of their preferred killing approaches.

80. The response that bans on assault weapons will have a limited effect on overall gun crime, which is most commonly committed with a handgun, is misplaced because California's assault weapons ban was not enacted to address gun crime generally, but rather was adopted in response to the growing mass shooting problem in the United States. The Republican legislature in Vermont recently adopted a series of gun control measures including barring sales of assault weapons to those under 21 after the arrest of Jack Sawyer based on evidence that he intended to commit a mass school shooting in Fair Haven, Vermont.⁶⁰ Among other things,

⁵⁹Scott Huddleston, "Hasan Sought Gun with 'High Magazine Capacity,'" October 21, 2010, <http://blog.mysanantonio.com/military/2010/10/hasan-sought-gun-with-high-magazine-capacity/>.

⁶⁰The Vermont State police arrested Jack Sawyer the day after the Parkland, Florida mass school shooting. *See State v. Sawyer*, 2018 VT 43, ¶¶ 5-10. Several public officials shortly thereafter announced their support for new gun safety legislation. *See* John Walters, *Scott Shifts Gun Stance Following Fair Haven Threat*, Seven Days (Feb. 16, 2018), available at

police recovered a diary titled “Journal of an Active Shooter” and were told by Mr. Sawyer that he had recently purchased a shotgun and was hoping to buy an AR-15 rifle.⁶¹ A prudent government will take steps to deprive determined mass shooters of their dream weapons.

81. Empirical studies of public mass shootings by both Mr. Koper and others lead them to support restrictions on assault weapons and the large-capacity magazines that can enhance their lethality. Mr. Koper concludes from his research that a revived federal assault weapons ban should “help to reduce the number and severity of mass shooting incidents.”⁶² Moreover, he has repeatedly observed, large-capacity magazines are disproportionately used in mass shootings and to kill law enforcement officers.⁶³

82. The data about criminal LCM use, initially reviewed by Mr. Koper, came from four relatively small locations, Baltimore, Milwaukee, Anchorage, and a forensic lab in Louisville, Kentucky and was limited in time. The available data from Kentucky ended in 2000, Milwaukee in 2001, Anchorage in 2002, and Baltimore in 2003.⁶⁴

<https://www.sevendaysvt.com/OffMessage/archives/2018/02/16/walters-scott-shifts-gun-stance-following-fair-haven-threat>; Alan J. Keays, *Scott says ‘everything’s on the table’ as pressure builds for gun measures*, VTDigger (Feb. 22, 2018), <https://vtdigger.org/2018/02/22/updated-scott-says-everythings-on-the-table-as-pressure-builds-for-gun-measures/>.

⁶¹ Alan J. Keays, *Court Shown Video of Alleged School Shooting Plotter’s Interrogation*, VTDigger (Feb. 27, 2018), <https://vtdigger.org/2018/02/27/ex-student-accused-fair-haven-shooting-plot-details-plans/>.

⁶² Carolyn Lochhead, “Feinstein renews effort to ban assault weapons,” *San Francisco Chronicle*, March 3, 2018, <https://www.sfchronicle.com/nation/article/Feinstein-renews-effort-to-ban-assault-weapons-12725959.php>.

⁶³ See Christopher Koper, *An Updated Assessment of the Federal Assault Weapons Ban: Impacts on Gun Markets and Gun Violence, 1994-2003* (Koper 2004 Assessment), 14, 18; Christopher Koper, *America’s Experience with the Federal Assault Weapons Ban, 1994 – 2004: Key Findings and Implications*, in *Reducing Gun Violence in America*, 161, 162 (Daniel Webster & Jon Vernick, eds., 2013) (Koper 2013 Findings).

⁶⁴ Koper 2004 Assessment at 68.

83. More recent Virginia data cover a significantly larger area and timeframe and reflects the trends predicted by the supply changes caused by the federal ban. Reporters from the Washington Post obtained the data from the Criminal Firearms Clearinghouse for the years 1993 through 2010. It was collected by the Virginia State Police from more than 200 local law enforcement agencies throughout the state. The percentage of police-recovered firearms that had LCMs in the Virginia data rose steadily after supply increased from about 13% in 1993 to nearly 18% in 1997 before sharply dropping to about 10% in the last year of the federal ban. After the ban ended, the percentage of police-recovered firearms with LCMs rose sharply as supply increased from 10% in 2004 to more than 14% in 2005 and continued to rise in subsequent years until LCM equipped guns accounted for 22% of all police-recovered firearms in Virginia.⁶⁵

84. The troubling gun massacres of the last year have underscored—yet again—the wisdom of the efforts of the California legislature and referendum voters “to aid in the shaping and application of those wise restraints that make men free” by banning the assault weapons that have been a key element enabling the escalating threat and lethality of horrific mass shootings.⁶⁶

85. It is my opinion that if, rather than allowing the federal assault weapons ban to lapse in 2004, the country had moved to a more complete ban, many of the gun tragedies of recent years would have been far less deadly and damaging to countless individuals who have been maimed and injured throughout the United States. It is also my opinion that California’s ban on assault weapons is one tool in the important governmental effort to reduce the likelihood that Californians will be killed in mass shootings by making it incrementally harder for

⁶⁵Fallis, David, VA data show drop in criminal firepower during assault gun ban, The Washington Post, January 23, 2011.

⁶⁶The quote is from John MacArthur Maguire and is enshrined at the Harvard Law School library. See <https://asklib.law.harvard.edu/friendly.php?slug=faq/115309> (last visited Nov. 1, 2017).

prospective mass shooters to equip themselves with weapons that are both uniquely appealing to their criminal aspirations as well as uniquely designed to aid in their homicidal rampages.

Uses of Assault Weapons for Self-Defense are Extremely Rare

86. In the face of the clear evidence from around the United States and the world, some of the comments in the complaint in this case seem to suggest that assault weapons might protect against crime rather than simply increase the death toll. First, it is worth noting that the vast majority of the time that an individual in the United States is confronted by violent crime, they do *not* use any gun for self-defense. Specifically, over the period from 2007-2011 when roughly 6 million violent crimes occurred each year, data from the National Crime Victimization Survey shows that the victim did not defend with a gun in 99.2 percent of these incidents – this in a country with 300 million guns in civilian hands.

87. Second, even if a gun were available for self-defense use, the need for an assault weapon is virtually non-existent according to decades of statements by NRA-affiliated and pro-gun experts. For example, John Lott has repeatedly made the following claims:

- based on “about 15 national survey[s] ... about 98 percent of [defensive gun uses] involve people brandishing a gun and not using them.”⁶⁷
- “When victims are attacked, 98 percent of the time merely brandishing a gun is enough to cause the criminal to stop his attack.”⁶⁸

⁶⁷Statements by John R. Lott, Jr. on Defensive Gun Brandishing Posted by Tim Lambert on October 17, 2002 <http://scienceblogs.com/deltoid/2002/10/17/lottbrandish/>. Page 41, State of Nebraska, Committee on Judiciary LB465, February 6, 1997, statement of John Lott, Transcript prepared by the Clerk of the Legislature, Transcriber's Office.

⁶⁸John R. Lott, Jr., Packing Protection, Letters, *Chicago Sun-Times*, April 30, 1997, Pg. 52.

- “Considerable evidence supports the notion that permitted handguns deter criminals. In 98% of the cases, people simply brandish weapons to stop attacks.”⁶⁹

88. Gary Kleck offers a similar albeit less precise claim: “More commonly, guns are merely pointed at another person, or perhaps only referred to (“I’ve got a gun”) or displayed, and this is sufficient to accomplish the ends of the user, whether criminal or non- criminal.”⁷⁰

89. Gun Owners of America cite published survey results on gun brandishing by Gary Kleck for the following statement about gun brandishing: “Of the ... times citizens use their guns to defend themselves every year, the overwhelming majority merely brandish their gun or fire a warning shot to scare off their attackers.”⁷¹

90. In other words, a gun is used in defense less than 1 percent of the time when someone is attacked in the United States. In the “overwhelming majority” of the less than 1% of cases in which a gun *is* used, brandishing is all that is needed for defense. The U.S. Supreme Court in *Heller* considered a handgun the quintessential self-defense weapon. It cannot be seriously maintained that an assault weapon plays any important role in furtherance of this Second Amendment goal. Indeed, if they were, the industry would have marketed them as protection weapons instead of assault weapons – or in the more recent marketing jargon “sporting” or “tactical” rifles.

91. Consequently, California’s assault weapons ban, which is designed to limit the mayhem caused by criminals engaging in the most dangerous forms of violent criminal behavior,

⁶⁹John R. Lott Jr., “Unraveling Some Brady Law Falsehoods,” *Los Angeles Times*, July 2, 1997.

⁷⁰Guns and Self-Defense by Gary Kleck, Ph.D., <http://www.pulpless.com/gunclock/kleck2.html>.

⁷¹Gary Kleck and Marc Gertz, “Armed Resistance to Crime: The Prevalence and Nature of Self-Defense with a Gun,” 86(1) *Journal of Criminal Law and Criminology* 150-187 (Fall 1995). <https://pdfs.semanticscholar.org/91da/afbf92d021f06426764e800a4e639a1c1116.pdf>.

is likely to have little or no impact on the defensive capabilities of law-abiding citizens in their homes.

92. Assault weapons are the mass killers' armaments of choice. A study of 62 public mass shooting incidents occurring between August 1982 and December 2012 found that more than half the time, the attackers used assault rifles, high-capacity magazines, or both.⁷²

93. Opponents to regulation sometimes think that because hunting rifles can deliver devastating injuries to humans almost as fast as a modern assault rifle, there is no point in an assault weapons ban. This argument is misguided. First, "almost as fast" is a huge caveat. Mass shootings start and end quickly in most cases, and anything that slows down the rate of fire of a mass killer is beneficial. Second, an assault rifle facilitates the type of spray fire with little recoil that would not be easily reproducible in a larger, heavier hunting rifle. Elevating the barriers to entry to those who would commit mass murder is clearly advantageous at the margins. Finally, any side by side comparison of a large hunting rifle and an AR-15 style assault weapon reveals that the AR-15 would have much more allure for mass killers who think of themselves as commandoes, demonstrating their immense power, as they seek to destroy their putative enemies. But the troubled, feckless individuals who predominate among public mass shooters

⁷² Follman M, Aronsen G, and Lee J, More than half of mass shooters used assault weapons and high-capacity magazines. <http://www.motherjones.com/politics/2013/02/assault-weapons-high-capacity-magazines-mass-shootings-feinstein>. This study defines a mass shooting as an incident where 4 or more victims are killed with a firearm, in a public place, and excludes familicide mass shootings and mass shootings related to other crimes such as gang violence or armed robbery. Out of the 62 incidents, the authors identified 31 mass shooting incidents involving high capacity magazines, 14 mass shooting cases involving assault weapons, and overall 33 cases involving assault weapons or high capacity magazines or both. The authors identify guns using high capacity magazines or assault weapons based on the definitions in the Feinstein Assault Weapons Ban Senate bill of 2013. <https://www.motherjones.com/politics/2012/07/mass-shootings-map/>

have often marinated in exactly this distorted mode of thinking, as judged by their conduct and often by their written pronouncements prior to their last acts of desperation.

Law Enforcement and Military Support for Assault Weapon and LCM Bans

94. The testimony of United States Attorney (District of Colorado) John Walsh before the Senate Judiciary Committee on February 27, 2013, is worth quoting:

From the point of view of most law enforcement professionals, a perspective I share as a long-time federal prosecutor and sitting United States Attorney, shutting off the flow of military-style assault weapons and high-capacity magazines is a top public safety priority. [...]

Like military-style assault weapons, high-capacity magazines should be reserved for war, and for law enforcement officers protecting the public.⁷³[The citation is from Walsh's statement.]⁷⁴

95. Dean L. Winslow, a retired Air Force colonel, flight surgeon, and professor of medicine at Stanford University has particularly valuable insight into the wisdom of having assault weapons in civilian hands.

96. Dr. Winslow noted that "as commander of an Air Force hospital in Baghdad during the surge, I have seen what these weapons do to human beings. The injuries are devastating."⁷⁵ Moreover, unlike a shotgun filled with birdshot, which is far more likely to hit a

⁷³See, David S. Fallis and James V. Grimaldi, *In Virginia, high-yield clip seizures rise*, Washington Post, Jan. 23, 2011, available at <http://www.washingtonpost.com/wp-dyn/content/article/2011/01/22/AR2011012204046.html> (last visited Nov. 1, 2017).

⁷⁴Statement of John F. Walsh before the United States Senate Committee on the Judiciary, <https://www.judiciary.senate.gov/imo/media/doc/2-27-13WalshTestimony.pdf> (last visited Nov. 1, 2017).

⁷⁵ See also, Heather Sher, "What I Saw Treating the Victims From Parkland Should Change the Debate on Guns," *The Atlantic Monthly*, February 22, 2018, <https://www.theatlantic.com/politics/archive/2018/02/what-i-saw-treating-the-victims-from-parkland-should-change-the-debate-on-guns/553937/>

target and not penetrate through walls than a bullet from an assault weapon, assault weapons are simply not well suited for defensive use in the home. Based on his extensive military and medical experience, Dr. Winslow noted that it is “insane ... that in the United States of America a civilian can go out and buy a semiautomatic weapon like an AR-15.”

97. Since AR-15’s were selected by the Defense Department as a weapon of choice for the battlefield in Vietnam because the destructive force of the gun made it especially lethal to even outer extremity wounds, the point could not be clearer: keeping these weapons out of civilian hands will reduce the death toll and seriousness of woundings in cases of mass shootings or other criminal or accidental uses of these weapons.

Gun Control Dramatically Reduced Mass Shootings in Australia

98. In this regard, consider what happened in Australia after a gunman shot and killed 35 people in Port Arthur, Tasmania in 1996. The Australian federal government persuaded all states and territories to implement tough new gun control laws. Under the National Firearms Agreement (NFA), firearms legislation was tightened throughout the country, national registration of guns was imposed, and it became illegal to hold certain long guns that might be used in mass shootings. The effect was that both while there were 7 public mass shootings in Australia during the seventeen-year period 1979–96 (a per capita rate that was higher than in the U.S. at the time), there have been none in the 22 years since (while the problem of mass shootings in the United States is getting worse⁷⁶). Adjusting for the relative populations of the

⁷⁶ Dan Diamond, “Mass Shootings Are Rising. Here's How To Stop Them,” *Forbes*, June 18, 2015, <https://www.forbes.com/sites/dandiamond/2015/06/18/charleston-deaths-are-an-american-tragedy-mass-shootings-are-rising/#12bd32ef787b>.

two countries, it would be as though there were 103 separate mass shooting events in the 18 years prior to the massive Australian gun buyback and none in the 22 years since.⁷⁷

99. The important point of the Australian experience for present purposes is that by depriving disturbed individuals of the vehicle by which they imagined they would unleash their murderous impulses, Australia showed that strong gun control measures such as bans on semiautomatic rifles could dramatically reduce the number of mass shootings – even if guns are still widely available, as they remain in Australia.

Some Responses to Points in the Complaint

100. The first footnote in the complaint provides the following quote that, although now taken as gospel among certain gun enthusiasts, bears no relationship to the truth: “Prior to 1989, the term “assault weapon” did not exist in the lexicon of firearms. It is a political term, developed by anti-gun publicists to expand the category of “assault rifles” so as to allow an attack on as many additional firearms as possible on the basis of undefined “evil” appearance.” This is utter nonsense. In fact, throughout the 1980s the gun industry marketed “assault” weapons because that promoted sales. The image below of a Guns & Ammo magazine cover highlighting assault rifles in July 1981 is just one of the numerous such advertisements and gun industry publications concerning assault weapons that one can find on the web throughout the 1980s.⁷⁸ Only when the increase in civilian ownership of these weapons was followed by outrage over (and fears of potential tort liability for) prominent mass shootings did the industry shift away from that direct terminology in its advertisements (while continuing to market guns

⁷⁷ The population of Australia in 1996 was 18.31 million and the population of the US in the same year was 269.39 million, according to data from the World Bank.

⁷⁸ See, <https://www.democraticunderground.com/126210025>.

with appeals to their military character).



The July 1981 issue of Guns & Ammo. (Reproduced from the New York Times, <https://www.nytimes.com/2013/01/17/us/even-defining-assault-weapons-is-complicated.html>)

101. The repeated references to “law-abiding citizens” in Plaintiffs’ complaint (I counted 40 such references) reflects an inaccurate assessment of the potential impact on “law-abiding citizens” of California’s assault weapons ban. Hundreds of law-abiding citizens have been killed in mass shootings and the problem of mass shootings is getting worse. Since the value of assault weapons for legitimate self-defense is virtually non-existent, the primary impact of removing such weapons from circulation will be to decrease the prospect that a law-abiding citizen will be confronted by a criminal with such weaponry.

102. “[L]aw-abiding citizens” whose guns are lost or stolen each year are one of the most important sources of weapons for criminals in the United States. The best current estimates are that roughly 400,000 guns move into the hands of criminals this way each year in the United States.⁷⁹ In other words, it is orders of magnitudes more likely that a criminal will steal a gun of a law-abiding citizen than a law-abiding citizen will fire an assault weapon in lawful self-defense. More assault weapons in the hands of law-abiding citizens like Nancy Lanza means more assault weapons in the hands of criminals such as Adam Lanza.

103. Further, many of the most horrific mass shootings in America were perpetrated by previously law-abiding citizens. The list, which is too long to recite, includes Stephen Paddock, who killed 58 in Las Vegas; Omar Mateen, who killed 49 in the Pulse nightclub; Adam Lanza, who killed 26 in Newtown, Connecticut; and the Batman killer in Aurora, Colorado, who killed 12.

104. The suggestion is also made that law-abiding citizens should have access to the same type of weaponry available to “trained police officers.” This analogy fails because police have very different needs than private individuals.

⁷⁹According to Larry Keane, senior vice president of the National Shooting Sports Foundation (a trade group that represents firearms manufacturers), “There are more guns stolen every year than there are violent crimes committed with firearms.” More than 237,000 guns were reported stolen in the United States in 2016, according to the FBI’s National Crime Information Center. The actual number of thefts is obviously much higher since many gun thefts are never reported to police, and “many gun owners who report thefts do not know the serial numbers on their firearms, data required to input weapons into the NCIC.” The best survey estimated 380,000 guns were stolen annually in recent years, but given the upward trend in reports to police, that figure likely understates the current level of gun thefts. See, Freskos, Brian. 2017c. “These Gun Owners Are at the Highest Risk of Having Their Firearms Stolen.” The Trace. 4/11/2017. <https://www.thetrace.org/2017/04/gun-owners-high-risk-firearm-theft/> and Freskos, Brian. 2017b. “Missing Pieces.” The Trace. 11/20/2017. <https://www.thetrace.org/features/stolen-guns-violent-crime-america/>.

105. To defend themselves, private individuals only need to scare off criminals. For that reason, many defensive gun uses consist entirely of scaring off criminals without any shots being fired at all. In contrast, police need to make arrests. Thus, while having a criminal run away is a desired outcome for the average citizen, it is a bad outcome for a police officer, which is why an extended gun battle is extremely rare for law-abiding citizens and far more common for the police. Accordingly, any effort to look to officer-involved shootings to make judgments about the needs of average citizens widely misses the mark.

106. Moreover, bullets fired by an assault weapon will easily penetrate walls, threatening family members or occupants in attached dwellings. This point was dramatically underscored when a concealed carry permit holder attending a gun safety class inadvertently fired a simple pistol, which discharged a bullet that easily penetrated the classroom wall, striking and killing the owner of the gun store who was working in the next room.⁸⁰ Encouraging the even greater danger of using an assault weapon for self-defense is a recipe for generating similar unwelcome outcomes that will put family members and neighbors at considerable risk.

107. According to Maryland Police Superintendent Marcus Brown, “in many home defense situations assault weapons are likely to be less effective than handguns because they are less maneuverable in confined areas.”⁸¹ Assault weapons are also more likely to shoot through walls and potentially injure or kill passers-by or innocent people in nearby residences; according to James E. Yurgealitis, a legal and forensic consultant, “projectiles travelling at velocities found

⁸⁰Peter Holley, *Ohio gun store owner accidentally killed by student during firearm-safety class*, *Washington Post*, June 19, 2016, available at https://www.washingtonpost.com/news/morning-mix/wp/2016/06/19/ohio-gun-store-owner-accidentally-killed-by-student-during-firearm-safety-class/?utm_term=.ed4c232d20ad (last visited Nov. 1, 2017).

⁸¹Brown Decl. ¶ 20, *Kolbe v. O'Malley*, 42 F. Supp. 3d 768 (D. Md. 2014).

in banned weapons pose a serious risk of over-penetration in most home construction materials.”⁸² Experts consider handguns clearly more suitable than assault weapons for self-defense. Massachusetts Chief of Police Mark K. Leahy said that when “asked to recommend a weapon for home defense or concealed carry, I always recommend a handgun.”⁸³

108. While defensive gun ownership is designed to prevent violence, the intent of the public mass shooter is to kill as many people as possible. Accordingly, the lethal capacity of the weapon will influence that toll of these homicidal events (as opposed to the defensive setting when brandishing typically achieves its goal). As Klarevas, Koper, and courts have observed, assault weapons with large capacity magazines are disproportionately used in mass shootings.⁸⁴ When such weapons are deployed in mass shootings, they “result in ‘more shots fired, persons wounded, and wounds per victim than do other gun attacks.’”⁸⁵ Among the mass shootings identified in a 2016 study by Everytown for Gun Safety, use of a large capacity magazine, or assault weapon that likely included a large capacity magazine, was associated with more than twice as many people being shot and nearly 50% more people being killed.⁸⁶

109. Many mass shooters seem to prefer using assault weapons, and mass shootings in which assault weapons are used tend to result in worse outcomes. Some estimates suggest that

⁸²Yurgealitis Decl. ¶ 79, *Worman v. Healy*, 293 F. Supp. 3d 251 (D. Mass. 2018).

⁸³Leahy Decl. ¶ 22, *Worman v. Healy*, 293 F. Supp. 3d 251 (D. Mass. 2018).

⁸⁴Christopher Ingraham, *It's Time to Bring Back the Assault Weapons Ban, Gun Violence Experts Say*, Washington Post, February 15, 2018, https://www.washingtonpost.com/news/wonk/wp/2018/02/15/its-time-to-bring-back-the-assault-weapons-ban-gun-violence-experts-say/?noredirect=on&utm_term=.e7c185b7f107; Koper 2004 Assessment), 14, 18.

⁸⁵*N.Y.S. Rifle*, 804 F.3d at 264 (quoting *Heller v. District of Columbia*, 670 F.3d 1244, 1263 (D.C. Cir. 2011)).

⁸⁶Mass Shootings in the United States: 2009 – 2016, Appendix of Shootings Profiled, <https://everytownresearch.org/documents/2017/03/appendix-mass-shootings-united-states-2009-2016.pdf>

around 11-13% of mass shootings are with assault weapons but these numbers tend to be biased downward.⁸⁷ For example, Christopher S. Koper et al. examine a sample of 145 mass shooting incidents (with incomplete weapons data) from 2009-2015 and estimated that assault weapons were used in at least 10.3% of all incidents.⁸⁸ This figure, however, rose to 35.7% when limiting the sample to the 42 cases where there is sufficiently detailed information to definitively determine whether an assault weapon was used.⁸⁹ Research by Luke Dillon shows that mass shooting incidents using assault weapons result in more people injured and more total victims.⁹⁰

110. Assault weapons also pose particular dangers and problems to law enforcement. Because of the types of rounds typically fired by assault weapons as well as the muzzle velocities they tend to have, assault weapons are “capable of penetrating the soft body armor customarily worn by law enforcement.”⁹¹ The ability to fire rapidly also allows criminals to more effectively engage with responding police officers, even from a significant distance.⁹² Empirical research by the Violence Policy Center shows that “one in five law enforcement officers slain in the line of duty was killed with an assault weapon,” despite the relative rarity of assault weapon use in crime in general.⁹³ Christopher S. Koper et al. find that assault weapons, virtually all of which

⁸⁷Everytown for Gun Safety, *Analysis of Recent Mass Shootings*, July 2014, available at <https://everytownresearch.org/documents/2015/04/analysis-of-recent-mass-shootings.pdf> (last visited Oct. 12, 2018) at 4; Mark Follman, Gavin Aronsen, and Deanna Pan, “A Guide to Mass Shootings in America,” *Mother Jones* (Sept. 20 2018).

⁸⁸Christopher S. Koper et al., “Criminal Use of Assault Weapons and High Capacity Semi-Automatic Firearms: An Updated Examination of Local and National Sources,” 95(3) *Journal of Urban Health* 313-321 (2017) at 317.

⁸⁹Christopher S. Koper et al. 2017 Finding at 317.

⁹⁰Luke Dillon, *Mass Shootings in the United States: An Exploratory Study of the Trends from 1982-2012*, Fall 2013, available at http://mars.gmu.edu/bitstream/handle/1920/8694/Dillon_thesis_2013.pdf?sequence=1&isAllowed=y (last visited Oct. 12, 2018).

⁹¹Brown Decl. ¶ 23, *Kolbe v. O'Malley*, 42 F. Supp. 3d 768 (D. Md. 2014).

⁹²Kyes Decl. ¶ 15-17, *Worman v. Healy*, 293 F. Supp. 3d 251 (D. Mass. 2018).

⁹³Violence Policy Center, *Officer Down: Assault Weapons and the War on Law*

were assault rifles, “accounted for 13.2% of the firearms used in [police murders]” from 2009-2013 (note that this excludes cases involving the officer’s own firearm).⁹⁴ Many law enforcement officers and agencies report that the possibility of encountering criminals with assault weapons necessitates that they spend a great deal of time and resources preparing for such encounters.⁹⁵

111. Assault weapons, acquired in the United States, are particularly popular weapons for drug traffickers and gang members, both in the United States and in Mexico.⁹⁶

112. There is evidence that the federal assault weapons ban was effective in limiting criminal use of assault weapons. Brady Center to Prevent Gun Violence analysis suggests that the share of gun crimes committed with assault weapons declined following the institution of bans.⁹⁷ This study used the share of Bureau of Alcohol, Tobacco, and Firearms (ATF) firearm traces that are of assault weapons as a dependent variable, even though it is likely that this measure is marred by changes in the nature and frequency of gun tracing behavior by ATF.⁹⁸ The Police Executive Research Forum found that the relative usage of assault weapons in crime increased after the ban’s end, with 38% of police agencies reporting that criminals’ use of assault weapons had increased.⁹⁹

Enforcement, May 2003, available at <http://www.vpc.org/studies/officer%20down.pdf> (last visited Oct. 12, 2018) at 5.

⁹⁴Christopher S. Koper et al. 2017 Finding at 317.

⁹⁵Brady Center to Prevent Gun Violence 2008 at 4-6.

⁹⁶Brady Center to Prevent Gun Violence 2008 at 3-6; Violence Policy Center, *Assault Pistols: The Next Wave*, January 2013, available at http://www.ncdsv.org/images/VPC_AssaultPistolsTheNextWave_1-2013.pdf (last visited Oct. 12, 2018) at 1-2; Spitzer Aff. ¶ 4, *Worman v. Healy*, 293 F. Supp. 3d 251 (D. Mass. 2018).

⁹⁷Brady Center to Prevent Gun Violence, *On Target: The Impact of the 1994 Federal Assault Weapons Ban*, March 2004, available at https://www.bradycampaign.org/sites/default/files/on_target.pdf (last visited Oct. 12, 2018).

⁹⁸Violence Policy Center, *A Further Examination of Data Contained in the Study On Target Regarding Effects of the 1994 Federal Assault Weapons Ban*, April 2004, available at <http://vpc.org/graphics/AWAnalysisFinal.pdf> (last visited Oct. 12, 2018) at 7-8.

⁹⁹Police Executive Research Forum, *Guns and Crime: Breaking New Ground By Focusing*

113. No one has a greater desire or use for an assault weapon than a determined mass killer, and governments have a responsibility to thwart those desires and those uses. A ban on such assault weapons is an important tool and prudent step in the effort to stop and/or diminish the harm from the most egregious homicidal rampages.

114. Any argument that because a large number of individuals throughout the United States have assault weapons today, they are “in common use” and therefore cannot be banned in California is wholly misguided. The current level of ownership cannot be taken as an expression of American approval of this dangerous weaponry. The existing stock of guns is a function of legislation and marketing and it provides a very slippery basis for determining what guns are presumptively legal or subject to appropriate prohibition, which should be determined from a more fact-based assessment of the nature of the threats and the relevant safety considerations.

115. As the Fourth Circuit held in upholding Maryland’s assault weapons ban in 2017: “the issue is whether the banned assault weapons and large-capacity magazines possess an amalgam of features that render those weapons and magazines like M16s and most useful in military service. The uncontroverted evidence ... is that they do.”¹⁰⁰

116. Indeed, the industry is constantly striving to find new ways to increase the lethality of their merchandise, so the notion that some threshold of “common use” erects a constitutional impediment that can obstruct governmental initiatives to promote citizen safety is wholly misguided. The ability and right of citizens to enact safety promoting measures designed

on the Local Impact, May 2010, available at https://www.policeforum.org/assets/docs/Critical_Issues_Series/guns%20and%20crime%20-%20breaking%20new%20ground%20by%20focusing%20on%20the%20local%20impact%202010.pdf (last visited Oct. 12 2018) at 2.

¹⁰⁰ *Kolbe v. Hogan*, (4th Circuit Court of Appeals, February 21, 2017), <https://cases.justia.com/federal/appellate-courts/ca4/14-1945/14-1945-2017-02-21.pdf?ts=1487707284>.

to deal with the serious and growing problem of public mass shootings should not be affected by the marketing ability of the gun industry to hawk their wares.

I declare under penalty of perjury that the foregoing is true and correct.

Date: October 25, 2018



John J. Donohue

EXHIBIT A

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- Stanford Law School, Professor of Law, September 1995 to June 2004.
 - William H. Neukom Professor of Law, February 2002 – June 2004.
 - John A. Wilson Distinguished Faculty Scholar, March 1997 – January 2002.
 - Academic Associate Dean for Research, since July 2001 – July 2003.
 - Stanford University Fellow, September 2001 – May 2003.
- Northwestern University School of Law:
 - Class of 1967 James B. Haddad Professor of Law, September 1994-August 1995
 - Harry B. Reese Teaching Professor, 1994-1995
 - Professor of Law, May 1991-September 1994
 - Associate Professor, May 1989-May 1991
 - Assistant Professor, September 1986-May 1989.
- Research Fellow, American Bar Foundation, September 1986-August 1995.
- Associate Attorney, Covington & Burling, Washington, D.C., October 1978-July 1981 (including last six months as Attorney, Neighborhood Legal Services)
- Law Clerk to Chief Justice T. Emmet Clarie, U.S. District Court, Hartford, Connecticut, September 1977-August 1978.

Temporary Appointments

- Visiting Professor, Bocconi University, Milan, Italy, October- November 2012, April 2014, and June 2015.
- 2011 Faculty Scholar in Residence, University of Denver Sturm College of Law, April 21-22, 2011.
- Visiting Fellow, The Milton Friedman Institute for Research in Economics, University of Chicago, October 2009
- Schmidheiny Visiting Professor of Law and Economics, St. Gallen University, November – December, 2007.

- Visiting Lecturer in Law and Economics, Gerzensee Study Center, Switzerland, June 2007.
- Visiting Professor, Tel Aviv University School of Law, May 2007.
- Herbert Smith Visitor to the Law Faculty, University of Cambridge, England, February 2006.
- Visiting Professor, Harvard Law School, January 2003.
- Fellow, Center for Advanced Studies in the Behavioral Sciences, Stanford, California, Academic year 2000-01.
- Visiting Professor, Yale Law School, Fall, 1999.
- Professor, Center for the Study of American Law in China, Renmin University Law School, Beijing, July 1998.
- Visiting Professor of Law and Economics, University of Virginia, January 1997.
- Lecturer, Toin University School of Law, Yokohama, Japan, May-June 1996.
- Cornell Law School, Distinguished Visiting Fellow in Law and Economics, April 8-12, 1996 and September 25-29, 2000
- Visiting Professor, University of Chicago Law School, January 1992-June 1992.
- Visiting Professor of Law and Economics, University of Virginia Law School, January 1990-May 1990.
- Fellow, Yale Law School Program in Civil Liability, July 1985-August 1986.
- Private Practice (part-time), New Haven, Connecticut, September 1981-August 1986.
- Instructor in Economics, Yale College, September 1983-August 1985.
- Summer Associate, Donovan Leisure Newton & Irvine, New York, Summer 1982.
- Summer Associate, Perkins, Coie, Stone, Olsen & Williams, Seattle, Washington, Summer 1976.
- Research Assistant, Prof. Laurence Lynn, Kennedy School of Government, Harvard University, Summer 1975.
- LSAT Tutor, Stanley Kaplan Education Center, Boston, Massachusetts; Research Assistant, Prof. Philip Heymann, Harvard Law School; Research Assistant, Prof. Gordon Chase, Harvard School of Public Health. (During Law School).

EDUCATION

Yale University, 1981-1986

- University Fellow in Economics; M.A. 1982, M. Phil. 1984, Ph.D. 1986.
 - Dissertation: "A Continuous-Time Stochastic Model of Job Mobility: A Comparison of Male-Female Hazard Rates of Young Workers." Awarded with Distinction by Yale.
 - Winner of the Michael E. Borus Award for best social science dissertation in the last three years making substantial use of the National Longitudinal Surveys--awarded by the Center for Human Research at Ohio State University on October 24, 1988.
- National Research Service Award, National Institute of Health.
- Member, Graduate Executive Committee; Graduate Affiliate, Jonathan Edwards College.

Harvard Law School, 1974-1977 (J.D.)

- Graduated Cum Laude.

- Activities: Law Clerk (Volunteer) for Judge John Forte, Appellate Division of the District Court of Central Middlesex; Civil Rights, Civil Liberties Law Review; Intra-mural Athletics; Clinical Placement (Third Year): (a) First Semester: Massachusetts Advocacy Center; (b) Second Semester: Massachusetts Attorney General's Office--Civil Rights and Consumer Protection Divisions. Drafted comments for the Massachusetts Attorney General on the proposed U.S. Department of Justice settlement of its case against Bechtel Corporation's adherence to the Arab Boycott of Israeli companies.

Hamilton College, 1970-1974 (B.A.)

- Departmental Honors in both Economics and Mathematics
 - Phi Beta Kappa (Junior Year)
- Graduated fourth in class with the following academic awards:
 - Brockway Prize
 - Edwin Huntington Memorial Mathematical Scholarship
 - Fayerweather Prize Scholarship
 - Oren Root Prize Scholarship in Mathematics
- President, Root-Jessup Public Affairs Council.

PUBLICATIONS

Books and Edited Volumes:

- Law and Economics of Discrimination, Edward Elgar Publishing, 2013.
- Employment Discrimination: Law and Theory, Foundation Press, 2005, 2009 (2d edition) (with George Rutherglen).
- Economics of Labor and Employment Law: Volumes I and II, Edward Elgar Publishing, 2007. http://www.e-elgar.co.uk/bookentry_main.lasso?id=4070
- Foundations of Employment Discrimination Law, Foundation Press, 2003 (2d edition).
- Foundations of Employment Discrimination Law, Oxford University Press, 1997 (Initial edition).

Book Chapters:

- "Drug Prohibitions and Its Alternatives." Chapter 2 in Cook, Philip J., Stephen Machin, Olivier Marie, and Giovanni Mastrobuoni, eds, *Lessons from the Economics of Crime: What Reduces Offending?* MIT Press. 45-66 (2013).
- "The Death Penalty," Chapter in Encyclopedia of Law and Economics, Spring (2013).
- "Rethinking America's Illegal Drug Policy," in Philip J. Cook, Jens Ludwig, and Justin McCrary, eds, Controlling Crime: Strategies and Tradeoffs (2011), pp.215-289 (with Benjamin Ewing and David Peloquin).

- “Assessing the Relative Benefits of Incarceration: The Overall Change Over the Previous Decades and the Benefits on the Margin,” in Steven Raphael and Michael Stoll, eds., “Do Prisons Make Us Safer? The Benefits and Costs of the Prison Boom,” pp. 269-341 (2009).
- “Does Greater Managerial Freedom to Sacrifice Profits Lead to Higher Social Welfare?” In Bruce Hay, Robert Stavins, and Richard Vietor, eds., Environmental Protection and the Social Responsibility of Firms: Perspectives from Law, Economics, and Business (2005).
- “The Evolution of Employment Discrimination Law in the 1990s: A Preliminary Empirical Evaluation” (with Peter Siegelman), in Laura Beth Nielsen and Robert L. Nelson, eds., Handbook of Employment Discrimination Research (2005).
- “The Impact of Concealed Carry Laws,” in Jens Ludwig and Philip Cook, Evaluating Gun Policy: Effects on Crime and Violence (Washington D.C.: Brookings, 2003).

Articles:

- “Brett Kavanaugh won't keep Americans safe,” CNN.com, September 5, 2018.
<https://www.cnn.com/2018/09/05/opinions/kavanaugh-wont-keep-america-safe-donohue/>
- “More Gun Carrying, More Violent Crime,” *Econ Journal Watch*, Vol. 15, No. 1, 67-82, January 2018.
<https://econjwatch.org/articles/more-gun-carrying-more-violent-crime>
- “Right-to-Carry Laws and Violent Crime: A Comprehensive Assessment Using Panel Data and a State-Level Synthetic Controls Analysis” NBER Working Paper w23510, www.nber.org/papers/w23510, January 2018 (with Abhay Aneja, and Kyle Weber).
- “Saving lives by regulating guns: Evidence for policy,” *Science* 08 Dec 2017, Vol. 358, Issue 6368, pp. 1259-1261, <http://science.sciencemag.org/content/358/6368/1259.full> (with Phil Cook)
- “Laws Facilitating Gun Carrying and Homicide,” *American Journal of Public Health*, Vol 107, No. 12, 1864-1865, December 2017, <http://ajph.aphapublications.org/doi/10.2105/AJPH.2017.304144>.
- “Comey, Trump, and the Puzzling Pattern of Crime in 2015 and Beyond,” 117 *Columbia Law Review* 1297 (2017). <http://columbialawreview.org/content/comey-trump-and-the-puzzling-pattern-of-crime-in-2015-and-beyond/>.
- “Did Jeff Sessions forget wanting to execute pot dealers?” *The Conversation*, January 23, 2017 (with Max Schoening), <https://theconversation.com/did-jeff-sessions-forget-wanting-to-execute-pot-dealers-71694>
- Reprinted in Huffington Post, http://www.huffingtonpost.com/the-conversation-us/did-jeff-sessions-forget_b_14344218.html

- Reprinted in Salon, <http://www.salon.com/2017/01/30/jeff-sessions-forgetting-he-once-wanted-to-execute-pot-dealers/#comments>
- “Jeff Sessions, The Grim Reaper of Alabama,” The New York Times, January 9, 2017 (with Max Schoening), <http://www.nytimes.com/2017/01/08/opinion/jeff-sessions-the-grim-reaper-of-alabama.html>
- "Testing the Immunity of the Firearm Industry to Tort Litigation," JAMA Intern Med. Published online November 14, 2016. <http://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2582991> (with David Studdert and Michelle Mello).
- “Empirical Analysis and the Fate of Capital Punishment,” 11 Duke Journal of Constitutional Law and Public Policy 51-106 (2016). Available at: <http://scholarship.law.duke.edu/djclpp/vol11/iss1/3>
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- "Empirical Evaluation of Law: The Dream and the Nightmare," 17 American Law and Economics Review 313 2015.
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- "How US Gun Control Compares to the Rest of the World," The Conversation, June 24, 2015. <http://theconversation.com/how-us-gun-control-compares-to-the-rest-of-the-world-43590>
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- "Do Police Reduce Crime? A Reexamination of a Natural Experiment," in Yun-Chien Chang, ed., Empirical Legal Analysis: Assessing the Performance of Legal Institutions, London: Routledge, Chapt. 5, pp. 125-143, 2014 (with Daniel E. Ho & Patrick Leahy)
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- "Substance vs. Sideshows in the More Guns, Less Crime Debate: A Comment on Moody, Lott, and Marvell" (with Abhay Aneja, and Alexandria Zhang) ECON JOURNAL WATCH 10(1) January 2013: 32-39
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- "Assessing Post-ADA Employment: Some Econometric Evidence and Policy Considerations." Journal of Empirical Legal Studies Vol. 8: No. 3, September 2011, pp. 477-503 (with Michael Ashley Stein, Christopher L. Griffin, Jr. and Sascha Becker).
- "The Impact of Right-to-Carry Laws and the NRC Report: Lessons for the Empirical Evaluation of Law and Policy," Am Law Econ Rev (Fall 2011) 13 (2): 565-631 (with Abhay Aneja and Alex Zhang). See January 2014 Revision released as an NBER working paper above.
- "Punishment is a Cost, Not a Benefit," Review of Mark A. R. Kleiman's "When Brute Force Fails: How to Have Less Crime and Less Punishment," XLVII Journal of Economic Literature (March 2010), 168-172.
- "The Politics of Judicial Opposition: Comment," Journal of Institutional and Theoretical Economics, 166(1), 108—114 (2010).
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- "Estimating the Impact of the Death Penalty on Murder," 11 American Law and Economics Review 249 (Fall 2009) (with Justin Wolfers).
- "The Impact of the Death Penalty on Murder," Criminology & Public Policy (November 2009, Volume 8, Issue 4) at pp. 795-801.
- "The Impact of Legalized Abortion on Teen Childbearing," 11 American Law and Economics Review 24 (2009) (with Jeff Grogger and Steven Levitt).
- "More Guns, Less Crime Fails Again: The Latest Evidence from 1977-2006," 6 Econ Journal Watch 218-233 (May 2009)(with Ian Ayres).
- "Yet Another Refutation of the More Guns, Less Crime Hypothesis – With Some Help From Moody and Marvell," 6 Econ Journal Watch 35-59 (January 2009)(with Ian Ayres).
- "Measurement Error, Legalized Abortion, and the Decline in Crime: A Response to Foote and Goetz," The Quarterly Journal of Economics (2008) 123 (1): 425-440 (with Steven Levitt). <http://qje.oxfordjournals.org/content/123/1/425.abstract>
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- “Murder in Decline in the 1990s: Why the U.S. and N.Y.C. Were Not That Special,” *Punishment and Society* 10: 333 (2008) at <http://pun.sagepub.com>
- “Understanding the 1990s Crime Drops in the U.S. and Canada,” *Canadian Journal of Criminology and Criminal Justice*, Vol 49, No. 4, p. 552 (October 2007).
- “The Law and Economics of Antidiscrimination Law,” A. M. Polinsky and Steven Shavell, eds., *Handbook of Law and Economics*, Volume 2 (2007), Pages 1387-1472.
- “Economic Models of Crime and Punishment,” *Social Research*, Vol. 74: No. 2, Summer 2007, pp. 379-412.
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- “Studying Labor Market Institutions in the Lab: Minimum Wages, Employment Protection, and Workfare: Comment,” *Journal of Theoretical and Institutional Economics*, 163(1), 46—51 (March 2007).
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- “The Discretion of Judges and Corporate Executives: An Insider’s View of the Disney Case,” *The Economists’ Voice*: Vol. 3: No. 8, Article 4. Available at: <http://www.bepress.com/ev/vol3/iss8/art4>
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- “Uses and Abuses of Empirical Evidence in the Death Penalty Debate,” 58 *Stanford Law Review* 791 (2005) (with Justin Wolfers).
 - Reprinted in Steven Levitt and Thomas Miles, eds., *The Economics of Criminal Law*, Edward Elgar Publishing (2008).
 - Reprinted in Robert Cooter and Francesco Parisi, eds., *Foundations of Law and Economics*, Edward Elgar Publishing (2010)
- “Does Terrorism Increase Crime? A Cautionary Tale,” (with Daniel Ho), 2005.
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- “The Employment Consequences of Wrongful-Discharge Laws: Large, Small, or None at All?” American Economic Review: Papers and Proceedings May, 2004 (with David Autor and Stewart Schwab).
- “Further Evidence that Legalized Abortion Lowered Crime: A Reply To Joyce,” 39 Journal of Human Resources 29 (Winter 2004)(with Steven Levitt).
- “The Final Bullet in the Body of the More Guns, Less Crime Hypothesis,” Criminology & Public Policy (July 2003, Volume 2, Issue 3) at pp. 397-410.
- “Shooting Down the ‘More Guns, Less Crime’ Hypothesis,” 55 Stanford Law Review 1193 (2003)(with Ian Ayres).
- “The Latest Misfires in Support of the ‘More Guns, Less Crime’ Hypothesis,” 55 Stanford Law Review 1371 (2003)(with Ian Ayres).
- “Can Guns, Or Gun Violence, Be Controlled?” (Reviewing James Jacobs, Can Gun Control Work?), The American Prospect (December 16, 2002), p. 35, <http://prospect.org/article/books-review-4>
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- “Guns, Violence, and the Efficiency of Illegal Markets,” 88 American Economic Review 463 (May 1998)(with Steve Levitt).
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- "Moore v. Texas and the Pathologies that Still Mar Capital Punishment in the U.S.," March 29, 2017, <https://law.stanford.edu/2017/03/29/moore-v-texas-and-the-pathologies-that-mar-capital-punishment-in-the-u-s/>
- "Trump and Gun Policy," Stanford Law School Legal Aggregate Blog, November 12, 2016, <http://stanford.io/2eoWnna>
- "Facts Do Not Support Claim That Guns Make Us Safer" Stanford Law School Legal Aggregate Blog, October 12, 2015, <https://law.stanford.edu/2015/10/12/professor-john-donohue-facts-do-not-support-claim-that-guns-make-us-safer/>
- "When will America wake up to gun violence?" CNN.com, July 20, 2012, <http://www.cnn.com/2012/07/20/opinion/donohue-gun-control/index.html>
- "It Takes Laws to Control the Bad Guys," The New York Times -- Room For Debate: <http://www.nytimes.com/roomfordebate/2011/01/11/more-guns-less-crime> (January 11, 2011).

- “Have “Woman-Protective” Studies Resolved the Abortion Debate? Don’t Bet on It,” <http://balkin.blogspot.com/2008/09/have-woman-protective-studies-resolved.html> (September 2008).
- “Dodging the Death Penalty Bullet On Child Rape,” <http://balkin.blogspot.com/2008/07/dodging-death-penalty-bullet-on-child.html> (July 2008).
- “Why I’d Stick With Yale Clerks-- Some Econometric Ruminations,” <http://balkin.blogspot.com/2008/04/why-id-stick-with-yale-clerks-some.html> (April 2008).

WORKSHOPS AND ADDRESSES

- “Gun Policy in America at a Critical Juncture,” SAFE, **Stanford Medical School**, September 17, 2018.
- “Empirical Evaluation of Law and Policy: The Battle for Truth,” **Woodside Rotary Club**, September 12, 2018.
- “Discussing America’s Second Amendment,” **San Jose Museum of Quilts & Textiles**, July 15, 2018.
- “The Legal Battle to End the Death Penalty in Connecticut,” **Law School of the University of Reggio Calabria**, Italy, June 15, 2018.
- Panelist, “Newtown and Gun Violence in the US, Humanity is Indivisible Series,” **Stanford University**, May 31, 2018.
- “Gun Policy In California and the US,” Human Rights Seminar; **Stanford Medical School**, May 29, 2018.
- “Gun Policy in the Wake of Parkland,” Sigma Alpha Epsilon Leadership Speaker Series, **Stanford Law School**, March 13, 2018; Stanford in Government event, Haas Center, **Stanford University**, April 20, 2018.
- Panelist, Town Hall Meeting on Gun Violence with Congresswoman Jackie Speier, **Burlingame High School**, April 14, 2018.
- Moderator, In Studio Conversation with Berkeley Law School Dean Erwin Chemerinsky: “Defining the Limits of Free Speech,” **Palo Alto League of Women’s Voters**, March 27, 2018. <https://youtu.be/cqHEIAVoTLY>
- “More than Thoughts & Prayers,” **American Constitution Society** and the **Federalist Society**, **U.C. Hastings School of Law**, March 14, 2018.
- Panelist, “Addressing Gun Violence,” **American Constitution Society**, Stanford Law School, March 8, 2018.
- “Impact of Right to Carry Laws on Violent Crime,” Public Policy colloquium, Stanford Economics Department, January 22, 2018; SPILS Methods Workshop, **Stanford Law School**, January 25, 2018; Quantlaw, **University of Arizona Law School**, March 2, 2018.
- Panelist, “Public Carry: Defending Against Efforts to Expand Carry Laws,” **National Gun Violence Prevention Meeting**, Washington, D.C., October 18, 2017.

- “Keynote Presentation: Right-to-Carry Laws and Violent Crime,” Second Amendment Litigation & Jurisprudence Conference, **The Law Center to Prevent Gun Violence**, October 16, 2017.
- “The Latest Evidence on Abortion Legalization and Crime,” Conference on Empirical Legal Studies, **Cornell University**, October 13, 2017.
- “Comey, Trump, and the Puzzling Pattern of Crime in 2015 and Beyond,” **University of Texas School of Law and Economics Seminar**, April 24, 2017, Faculty Workshop, **UC Davis School of Law**, April 10, 2017; Law and Social Science Seminar, **Texas A&M University School of Law**, March 6, 2017; Quantlaw, **University of Arizona Law School**, February 17, 2017.
- Debate with Kent Scheidegger on Capital Punishment, Philosophy of Punishment Seminar, **JFK University School of Law**, March 18, 2017.
- “The Evidence on Guns and Gun Laws,” **Federal Bar Council Program on Guns and Gun Laws** -- Rancho Mirage, California, February 23, 2017.
- “Guns, Crime and Race in America,” Stanford’s Center for Population Health Sciences, **Stanford Medical School**, October 17, 2016.
- “Evaluating the Death Penalty,” Forum on California Propositions 62 and 66, **Stanford Law School**, September 14, 2016.
- “Empirical Analysis and the Fate of Capital Punishment,” Colloquium, Presley Center for Crime and Justice Studies; **University of California, Riverside**, October 24, 2016.
- “Gun Violence and Mental Illness,” Department of Psychiatry, **Stanford University**, August 25, 2016.
- “The Battle Over Gun Policy In America,” Physicians and Social Responsibility” seminar; **Stanford Medical School**, October 3, 2016; **Bioethics Committee of the San Mateo County Medical Association**, April 27, 2016; **The League of Women Voters of Palo Alto**, April 19, 2016; Human Rights and Health Seminar, **Stanford University**, April 12, 2016; Bechtel International Center, **Stanford University**, February 23, 2016; Stanford in Government Seminar, Haas Center, **Stanford University**, February 2, 2016.
- American Economic Association Continuing Education Course “The Economics of Crime” (with Jens Ludwig), **AEA Annual Meeting**, San Francisco, January 5-7, 2016.
- “Race and Arbitrariness in the Connecticut Death Penalty,” **University of Connecticut School of Law**, Nov. 20, 2015.
- “*Connecticut v. Santiago* and the Demise of the Connecticut Death Penalty,” Faculty Workshop, **Stanford Law School**, August 19, 2015.
- “Do Handguns Make Us Safer? A State-Level Synthetic Controls Analysis of Right-to-Carry Laws,” Second Amendment Conference, **Covington and Burling, New York**, May 14, 2015; **NBER Summer Institute**, Cambridge, MA, July 23, 2015; Faculty Workshop, **Stanford Law School**, November 11, 2015.

- “U.S. Criminal Justice Under Siege : Will Becker or Beccaria Prevail?” Faculty Seminar, **Bocconi University School of Law, Milan, Italy**, June 18, 2015.
- “Can You Believe Econometric Evaluations of Law, Policy, and Medicine?” **Stanford Law School**, Legal Theory Workshop, March 1, 2007; Faculty Workshop, **Tel Aviv University School of Law**, May 14, 2007; Faculty Workshop, **University of Haifa Law School**, May 16, 2007; Law and Economics Workshop, **Georgetown Law School**, September 19, 2007; Law and Economics Workshop, **St. Gallen Law School**, Switzerland, November 29, 2007; and Yale Law School, February 25, 2008; Law and Economics Workshop, **Swiss Institute of Technology**, Zurich, Switzerland, May 21, 2008; Faculty Workshop, **University of Virginia Law School**, October 24, 2008; Plenary Session, Latin American and Caribbean Law and Economics Association, **Universitat Pompeu Fabra (Barcelona)**, June 15, 2009; **Google, Milan**, Italy, June 8, 2015.
- Commentator: ““Throw Away the Jail or Throw Away The Key? The Effect of Punishment on Recidivism and Social Cost,”” by Miguel F. P. de Figueiredo, American Law and Economics Association Meetings, **Columbia Law School**, May 15, 2015.
- “Broken Windows, Stop and Frisk, and Ferguson,” 2015 Justice Collaboratory Conference: Policing Post-Ferguson, **Yale Law School**, April 17, 2015.
- “Assessing the Development and Future of Empirical Legal Studies,” **Stanford Law School** course on Modern American Legal Thought, February 25, 2015.
- Commentator: “Payday Lending Restrictions and Crimes in the Neighborhood,” by Yilan Xu, 9th Annual Conference on Empirical Legal Studies, **Boalt Hall**, Berkeley, CA, November 7, 2014.
- “An Empirical Evaluation of the Connecticut Death Penalty Since 1973: Are There Unconstitutional Race, Gender and Geographic Disparities?” Faculty Workshop, **Economics Department, Rice University**, Houston, TX, Feb. 18, 2014; Law and Economics Workshop, **University of Virginia Law School**, September 11, 2014; Faculty Colloquium, **University of San Diego School of Law**, October 3, 2014.
- “What’s Happening to the Death Penalty? A Look at the Battle in Connecticut,” **Hamilton College**, Clinton, New York, June 6, 2014.
- Panel Member, Research Methods Workshop, Conference for Junior Researchers on Law and Society, **Stanford Law School**, May 15, 2014.
- “Logit v. OLS: A Matter of Life and Death,” Annual Meeting of the American Law and Economics Association, **University of Chicago**, May 9, 2014.
- “Guns: Law, Policy, Econometrics,” Second Amendment Litigation and Jurisprudence Conference, **Jenner & Block**, Chicago, May 8, 2014.
- “The Impact of Antidiscrimination Law: The View 50 Years after the Civil Rights Act of 1964,” **Renaissance Weekend**, Liguna Niguel, CA, Feb. 15, 2014.
- “Concealed Carry and Stand Your Ground Law,” **Renaissance Weekend**, Liguna Niguel, CA, Feb. 15, 2014.

- “Reducing Gun Violence,” Forum on Gun Violence Reduction, Mountainview City Hall, Mountainview, CA, Feb. 8, 2014.
- “Gun Policy Debate,” C-SPAN. National Cable Satellite Corporation, Jan. 16, 2014. <<http://www.c-span.org/video/?317256-1/GunPoli>>.
- “Trial and Decision in the Connecticut Death Penalty Litigation,” Faculty Workshop, **Stanford Law School**, November 20, 2013.
- “Rethinking America’s Illegal Drug Policy,” Law and Economics Workshop, **Harvard Law School**, April 20, 2010; NBER Conference, “Economical Crime Control,” **Boalt Hall**, Berkeley, CA, January 16, 2010; **NBER Summer Institute** Pre-Conference “Economical Crime Control,” July 23, 2009; **Whitney Center** Lecture Series, Hamden, CT, October 5, 2009; Law and Economics Workshop, **University of Chicago Law School**, October 13, 2009; Seminar for Spanish Law Professors, **Harvard Law School**, October 23, 2009; The Criminal Law Society, **Stanford Law School**, March 31, 2011, **University of Denver Sturm College of Law**, April 21, 2011; Law and Economics Workshop, **Boalt Hall**, Berkeley, CA, October 17, 2011; Shaking the Foundations Conference, **Stanford Law School**, November 2, 2013.
- “The Challenge to the Connecticut Death Penalty,” **Yale Law School**, Death Penalty Clinic, November 5, 2007; Graduate Student Seminar, November 11, 2009; Stanford Program in International Legal Studies Seminar, **Stanford Law School**, Nov. 11, 2010; Faculty Workshop, **Stanford Law School**, June 8, 2011; Faculty workshop, **Duke Law School**, April 13, 2012; Program on Public Policy, **Stanford University**, May 2, 2012; Annual Meeting of the American Law and Economics Association, **Vanderbilt Law School**, Nashville, TN, May 18, 2013; Faculty Workshop, **University of Arizona Law School**, October 17, 2013; 8th Annual Conference on Empirical Legal Studies, **University of Pennsylvania Law School**, October 26, 2013.
- Commentator: “How to Lie with Rape Statistics” by Corey Rayburn Yung, 8th Annual Conference on Empirical Legal Studies, **University of Pennsylvania Law School**, October 2013.
- “An Empirical Look at Gun Violence in the U.S.” **University of Arizona Law School**, October 17, 2013
- Discussant, “Sex Offender Registration and Plea Bargaining,” **NBER Labor Summer Institute**, Cambridge, MA, July 25, 2013.
- “What Works in the War Against Crime?” **Renaissance Weekend**, Jackson Hole, Wyoming, July 5, 2013.
- Seminar Presentation, “Statistics and the Streets – Curbing Crime, Realities of the Death Penalty, and Successes in Public Safety,” **Renaissance Weekend**, Jackson Hole, Wyoming, July 5, 2013.
- Flashes of Genius (Glimpses of Extra-ordinarily Novel Thinking) -- “Stemming Gun Violence,” **Renaissance Weekend**, Jackson Hole, Wyoming, July 5, 2013.
- “Can Laws Reduce Crime?” Safe Oakland Speakers Series, Holy Names University, Oakland, CA, May 1, 2013, <http://www.ustream.tv/channel/safe-oakland-speaker-series>
- Presentation on “The Death Penalty in America” on a panel on “human rights and criminal justice systems in the world,” Science for Peace conference at Bocconi University in Milan, Italy, November 15, 2012. <http://>

www.fondazioneveronesi.it/scienceforpeace2012/

- Seminar Presentation, "America's Criminal Justice System," **Renaissance Weekend**, Santa Monica, CA., Feb. 19, 2012.
- "Statistical Inference, Regression Analysis and Common Mistakes in Empirical Research," SPILLS Fellow's Workshop, **Stanford Law School**, February 2, 2012.
- "New Evidence in the 'More Guns, Less Crime' Debate: A Synthetic Controls Approach," Conference on Empirical Legal Studies, **Northwestern Law School**, November 4, 2011.
- "Drug Legalization and its Alternatives," *Lessons from the Economics of Crime: What Works in Reducing Offending?* **CESifo Venice Summer Institute Workshop**, July 22, 2011.
- "Incapacitating Addictions: Drug Policy and American Criminal Justice," in Rethinking the War on Drugs through the US-Mexico Prism," **Yale Center for the Study of Globalization**, May 12, 2011.
- Plenary Session: Flashes of Genius (Glimpses of Extra-ordinarily Novel Thinking) -- "Has Legalized Abortion Reduced Crime?" **Renaissance Weekend**, Liguna Niguel, CA., Feb. 18, 2011.
- "An Evidence-Based Look at the More Guns, Less Crime Theory (after Tucson)" The American Constitution Society for Law and Policy (ACS), **Stanford Law School**, January 25, 2011; **Renaissance Weekend**, Liguna Niguel, CA., Feb. 19, 2011; "Faculty Forum" at the External Relations Office, **Stanford Law School**, April 5, 2011.
- "Empirical Evaluation of Law: The Dream and the Nightmare," SPILLS Fellows Lecture, **Stanford Law School**, January 15, 2015; Legal Studies Workshop, **Stanford Law School**, Feb. 7, 2011; **Renaissance Weekend**, Liguna Niguel, CA., Feb. 20, 2011; **University of Denver Sturm College of Law**, April 22, 2011; Presidential Address, Annual Meeting of the American Law and Economics Association, **Columbia University**, May 20, 2011.
- Death Sentencing in Connecticut," **American Society of Criminology Annual Meeting**, San Francisco, Nov. 17, 2010.
- "The Impact of Right to Carry Laws and the NRC Report: Lessons for the Empirical Evaluation of Law and Policy," Conference on Empirical Legal Studies, **Yale Law School**, Nov. 6, 2010.
- Comment on Bushway and Gelbach, "Testing for Racial Discrimination in Bail Setting Using Nonparametric Estimation of a Parametric Model," Conference on Empirical Legal Studies, **Yale Law School**, Nov. 6, 2010.
- Commentator, "A Test of Racial Bias in Capital Sentencing," **NBER Political Economy Program Meeting**, April 23, 2010.
- "The (Lack of a) Deterrent Effect of Capital Punishment," Faculty Workshop, **University of Chicago Economics Department**, October 21, 2009.
- Keynote Address, "The Evolution of Econometric Evaluation of Crime and Deterrence," 1st Paris& Bonn Workshop on Law and Economics: The Empirics of Crime and Deterrence, **University of Paris Ouest Nanterre**, September 24, 2009.

- Comment on Cook, Ludwig, and Samaha, "Gun Control after *Heller*: Litigating Against Regulation," NBER Regulation and Litigation Conference, **The Boulders**, Carefree, Arizona, September 11, 2009.
- "Impact of the Death Penalty on Murder in the US," Faculty Workshop, Law School, **Universitat Pompeu Fabra (Barcelona)**, June 18, 2009.
- Comment on Joanna Shepherd's "The Politics of Judicial Opposition," Journal of Institutional and Theoretical Economics Conference, **Kloster Eberbach, Germany**, June 12, 2009.
- "The Great American Crime Drop of the '90s: Some Thoughts on Abortion Legalization, Guns, Prisons, and the Death Penalty," **Hamilton College**, Clinton, NY, June 5, 2009.
- "The Impact of the ADA on the Employment and Earnings of the Disabled," **American Law and Economics Association Meetings**, University of San Diego, May 15, 2009.
- "Crime and Punishment in the United States," **Eastern State Penitentiary, Yale Alumni Event**, Philadelphia, PA, April 26, 2009.
- "Measuring Culpability in Death Penalty Cases," Conference on Applications of Economic Analysis in Law, **Fuqua School of Business, Duke University**, April 18, 2009.
- "Autopsy of a Financial Crisis," Workshop on New International Rules and Bodies for Regulating Financial Markets, **State University of Milan**, March 23, 2009.
- "Yet Another Refutation of the More Guns, Less Crime Hypothesis – With Some Help From Moody and Marvell, Law and Economics Workshop, **NYU Law School**, March 10, 2009.
- Intelligence-Squared Debate: "Guns Reduce Crime," **Rockefeller University**, New York, October 28, 2008.
- "The D.C. Handgun Controls: Did the Supreme Court's Decision Make the City Safer?" Debate, **The Contemporary Club of Albemarle**, Charlottesville, VA, October 23, 2008.
- "Evaluating the Empirical Claims of the Woman-Protective Anti-Abortion Movement," Panel on The Facts of the Matter: Science, Public Health, and Counseling, Yale Conference on the Future of Sexual and Reproductive Rights, **Yale Law School**, October 11, 2008.
- "Empirical Evaluation of Gun Policy," **Harvard Law School**, October 9, 2008.
- "Assessing the Relative Benefits of Incarceration: The Overall Change Over the Previous Decades and the Benefits on the Margin," **Russell Sage Foundation**, New York, May 3, 2007; Law and Economics Workshop, **Tel Aviv University School of Law**, May 28, 2008.
- Death Penalty Debate with Orin Kerr, Bloggingheads, April 11, 2008.
- "Evaluating Connecticut's Death Penalty Regime," Faculty Public Interest Conversation, **Yale Law School**, April 9, 2008.
- "The Death Penalty in Connecticut and the United States," **The Whitney Center**, Hamden, CT, November 5, 2007; Seminar on Advanced Criminal Law: Criminal Sentencing and the Death Penalty, **Fordham Law School**, April 8, 2008; Law and Economics Workshop, **Swiss Institute of Technology**, Zurich, Switzerland, May 20, 2008.

- Radio Interview, "The Death of Capital Punishment?" Morning Edition: Where We Live. WNPR. Connecticut, March 10, 2008.
- Comment on Thomas Dee's "Born to Be Mild: Motorcycle Helmets and Traffic Safety," **American Economics Association Meetings**, New Orleans, Louisiana, January 4, 2008.
- "The Empirical Revolution in Law and Policy: Jubilation and Tribulation," **Keynote Address, Conference on Empirical Legal Studies, NYU Law School**, November 9, 2007.
- "The Optimal Rate of Incarceration," **Harvard Law School**, October 26, 2007.
- "Empirical Evaluation of Law: The Impact on U.S. Crime Rates of Incarceration, the Death Penalty, Guns, and Abortion," Law and Economics Workshop, **St. Gallen Law School, Switzerland**, June 25, 2007.
- Comment on Eric Baumer's "A Comprehensive Assessment of the Contemporary Crime Trends Puzzle," Committee on Law and Justice Workshop on Understanding Crime Trends, **National Academy of Sciences**, Washington, D.C., April 25, 2007.
- Comment on Bernard Harcourt, Third Annual Criminal Justice Roundtable Conference, **Yale Law School**, "Rethinking the Incarceration Revolution Part II: State Level Analysis," April 14, 2006.
- "Corporate Governance in America: The Disney Case," **Catholic University Law School**, Milan, Italy, March 19, 2007.
- "The U.S. Tort System," (Latin American) Linkages Program, **Yale Law School**, February 13, 2007.
- Panel Member, "Guns and Violence in the U.S.," **Yale University, International Center**, January 24, 2007.
- "Economic Models of Crime and Punishment," Punishment: The U.S. Record: A Social Research Conference at **The New School**, New York City, Nov. 30, 2006
- Comment on Baldus et al, "Equal Justice and the Death Penalty: The Experience of the United States Armed Forces, Conference on Empirical Legal Studies, **University of Texas Law School**, Austin, Texas, October 27, 2006.
- "Empirical Evaluation of Law: The Promise and the Peril," **Harvard Law School**, October 26, 2006.
- "Estimating the Impact of the Death Penalty on Murder," Law and Economics Workshop, **Harvard Law School**, September 12, 2006; Conference on Empirical Legal Studies, **University of Texas Law School**, October 28, 2006; Joint Workshop, Maryland Population Research Center and School of Public Policy, **University of Maryland**, March 9, 2007.
- "Why Are Auto Fatalities Dropping so Sharply?" **Faculty Workshop, Wharton**, Philadelphia, PA, April 19, 2006.
- "The Law of Racial Profiling," Law and Economic Perspectives on Profiling Workshop, **Northwestern University Department of Economics**, April 7, 2006.
- "Landmines and Goldmines: Why It's Hard to Find Truth and Easy To Peddle Falsehood in Empirical Evaluation of Law and Policy," **Rosenthal Lectures, Northwestern University School of Law**, April 4-6, 2006.
- "The Impact of Legalized Abortion on Crime," **American Enterprise Institute**, March 28, 2006.

- “The Impact of Damage Caps on Malpractice Claims: Randomization Inference with Difference-in-Differences,” **Conference on Medical Malpractice, The Rand Corporation**, March 11, 2006.
- “Powerful Evidence the Death Penalty Deters?” **Leighton Homer Surbeck Chair Lecture, Yale Law School**, March 7, 2006.
- “Uses and Abuses of Empirical Evidence in the Death Penalty Debate,” Faculty Workshop, **University of Connecticut Law School**, October 18, 2005; Faculty Workshop, **UCLA Law School**, February 3, 2006; Law and Economics Workshop, **Stanford Law School**, February 16, 2006; ; Law Faculty, **University of Cambridge, Cambridge, England**, February 28, 2006; **University of Illinois College of Law**, Law and Economics Workshop, March 2, 2006; Faculty Workshop, **Florida State University Law School**, March 30, 2006; **ALEA**, Berkeley, CA May 6, 2006; **University of Chicago Law School**, Law and Economics Workshop, May 9, 2006.
- “Is Gun Control Illiberal?” Federalist Society Debate with Dan Kahan at Yale Law School, January 31, 2006.
- “Witness to Deception: An Insider’s Look at the Disney Trial,” **2005-2006 Distinguished Lecture, Boston University School of Law**, November 10, 2005; Center for the Study of Corporate Law, **Yale Law School**, November 3, 2005; **Law Offices of Herbert Smith, London, England**, February 23, 2006; Law Faculty, **University of Cambridge, Cambridge, England**, February 27, 2006.
- “Understanding the Surprising Fall in Crime in the 1990s,” **Rotary Club**, Orange, CT, August 5, 2005; Faculty Workshop, **Yale School of Management**, September 21, 2005.
- Panel Member, “The Board’s Role in Corporate Strategy,” The Yale Global Governance Forum, **Yale School of Management**, September 8, 2005.
- “Crime and Abortion,” **Museo de la Ciudad de Mexico**, Mexico City, October 20, 2003.
- “Allocating Resources towards Social Problems and Away From Incarceration as a Means of Reducing Crime,” **MacArthur Foundation Research Network on Adolescent Development and Juvenile Justice**, San Francisco, CA, February 28, 2003.
- “Shooting Down the More Guns, Less Crime Hypothesis,” **Stanford Law School**, Law and Economics Seminar, January 28, 2003; Faculty Workshop, Center for the Study of Law and Society, **Boalt Hall**, University of California, Berkeley, Feb. 24, 2003; Development Workshop, **Stanford Law School**, April 25, 2003; Faculty Workshop, **Stanford Law School**, July 2, 2003; Law and Public Affairs Program Workshop, **Princeton University**, September 29, 2003; Stanford Alumni Weekend, **Stanford University**, October 17, 2003; Faculty Workshop, **CIDE**, Mexico City, October 20, 2003.
- “The Impact of Legalized Abortion on Teen Childbearing,” **NBER Labor Summer Institute**, Cambridge, MA, July 30, 2002.
- “Do Concealed Handgun Laws Reduce Crime?” Faculty Workshop, **Stanford Law School**, October 4, 2000; First-Year Orientation, **Stanford Law School**, September 5, 2001; Faculty Workshop, **Harvard Law School**, April 26, 2002; Faculty Workshop, **Columbia Law School**, April 29, 2002.
- “The Evolution of Employment Discrimination Law in the 1990s: An Empirical Investigation,” Fellows Workshop, American Bar Foundation, February 11, 2002.
- “The Role of Discounting in Evaluating Social Programs Impacting on Future Generations: Comment on Arrow and Revesz,” Colloquium on Distributive Justice, **Stanford Law School**, Oct. 18, 2001.

- “The Impact of Wrongful Discharge Laws,” **NBER Labor Summer Institute**, Cambridge, MA, July 30, 2001; Labor and Employment Seminar, **NYU Law School**, October 16, 2001; Faculty Workshop, **Stanford Law School**, September 18, 2002; **Yale Law School**, January, 2004.
- “Racial Profiling: Defining the Problem, Understanding the Cause, Finding the Solution,” **American Society of Criminology Conference**, San Francisco, CA, November 15, 2000.
- “Institutional Architecture for Building Private Markets,” Conference on “Latin America and The New Economy” at **Diego Portales University** in Santiago, Chile, October 26, 2000.
- “The History and Current Status of Employment Discrimination Law in the United States,” Unicapital School of Law, (Centro Universitario Capital), Sao Paulo, Brazil, March 10, 2000.
- “Corporate Governance in Developing Countries: Opportunities and Dangers,” Conference on Neoliberal Policies for Development: Analysis and Criticism,” University of Sao Paulo Law School, March 13, 2000
- “Legalized Abortion and Crime,” Law and Economics Workshop, **University of Pennsylvania Law School**, September 21, 1999; Faculty Workshop, **Yale Law School**, September 27, 1999; **John Jay College of Criminal Justice**, October 7, 1999; Faculty Workshop, **Quinnipiac Law School**, October 13, 1999; Faculty Workshop, **University of Connecticut Law School**, October 19, 1999; **University of Virginia Law School**, October 25, 1999; Faculty Workshop, **Baruch College**, November 9, 1999; MacArthur Foundation Social Interactions and Economic Inequality Network Meeting, **Brookings Institution**, December 4, 1999; Faculty Workshop, **NYU Law School**, January 21, 2000; Faculty Workshop, **University of San Diego Law School**, February 18, 2000; Public Economics Workshop, Department of Economics, **Stanford University**, April 28, 2000; Law and Economics Workshop, **University of California at Berkeley Law School**, September 18, 2000; Faculty Workshop, **Cornell Law School**, September 26, 2000; OB-GYN Grand Rounds, **Stanford Medical School**, October 2, 2000; **Center for Advanced Studies in the Behavioral Sciences**, October 11, 2000; Faculty Workshop, **Graduate School of Business**, February 5, 2002.
- Panel member, Session on Executive Compensation, Director's College, **Stanford Law School**, March 23, 1999.
- “Exploring the Link Between Legalization of Abortion in the 1970s and Falling Crime in the 1990s,” Law and Economics Workshop, **Harvard Law School**, March 16, 1999; Law and Economics Workshop, **University of Chicago Law School**, April 27, 1999; Faculty Workshop, **Stanford Law School**, June 30, 1999.
- “Is the Increasing Reliance on Incarceration a Cost-Effective Strategy of Fighting Crime?” Faculty Workshop, **University of Wisconsin School of Social Science**, February 19, 1999.
- “What Do We Know About Options Compensation?” Institutional Investors Forum, **Stanford Law School**, May 29, 1998.
- Commentator on Orlando Patterson’s presentation on “The Ordeal of Integration,” **Stanford Economics Department**, May 20, 1998.
- “Understanding The Time Path of Crime,” Presentation at Conference on Why is Crime Decreasing? **Northwestern University School of Law**, March 28, 1998; Faculty Workshop, **Stanford Law School**, September 16, 1998; Faculty Workshop, **University of Michigan Law School**, February 18, 1999.
- Commentator, Conference on Public and Private Penalties, the **University of Chicago Law School**, Dec. 13-14, 1997.

- "Some Thoughts on Affirmative Action," Presentation at a conference on Rethinking Equality in the Global Society, **Washington University School of Law**, November 10, 1997.
- Commentator on Chris Jencks' Presentation on Welfare Policy, **Stanford Economics Department**, October 8, 1997.
- "The Impact of Race on Policing, Arrest Patterns, and Crime," Faculty Workshop, **Stanford Law School**, September 10, 1997; Law and Economics Workshop, **University of Southern California Law School**, October 23, 1997; Law and Economics Workshop, **Columbia University Law School**, November 24, 1997; Law and Economics Workshop, Haas School of Business, **University of California at Berkeley**, February 19, 1998; Annual Meeting of the American Law and Economics Association, **University of California at Berkeley**, May 8, 1998; Conference on the Economics of Law Enforcement, **Harvard Law School**, October 17, 1998.
- "Crime in America: Understanding Trends, Evaluating Policy," **Stanford Sierra Camp**, August 1997.
- "Executive Compensation: What Do We Know?" TIAA-CREF Committees on Corporate Governance and Social Responsibility, Center for Economic Policy Research, **Stanford University**, June 27, 1997; NASDAQ Director's Day, **Stanford University**, June 30, 1997.
- Panel Chair, Criminal Law (Theory), Criminal Law (Empirical), and Labor/Discrimination/Family Law, American Law and Economics Association, **University of Toronto Law School**, May 9-10, 1997.
- Commentator, "Diversity in Law School Hiring," **Stanford Law School**, February 25, 1997.
- Keynote Speaker, "The Optimal Rate of Crime," 11th Annual Conference, **The Oklahoma Academy for State Goals**, Tulsa, Oklahoma, May 7, 1996.
- Panel member, Session on Executive Compensation, Director's College, **Stanford Law School**, March 28-29, 1996.
- "The Power of Law: Can Law Make a Difference in Improving the Position of Women and Minorities in the Labor Market?" The Fellows of the **American Bar Foundation**, Baltimore, Maryland, February 3, 1996.
- "Public Action, Private Choice and Philanthropy: Understanding the Sources of Improvement in Black Schooling Quality in Georgia, 1911-1960," **Stanford Faculty Workshop**, January 24, 1996; Faculty Workshop, **University of Virginia Law School**, January 22, 1997; **National Bureau of Economic Research**, Cambridge, Massachusetts, Labor Studies Conference, April 3, 1998.
- Commentator, "The Effect of Increased Incarceration on Crime," Meetings of the **American Economics Association**, San Francisco, January 6, 1996.
- Commentator, Symposium on Labor Law, **University of Texas Law School**, November 10-11, 1995.
- Panel Member, Symposium on Criminal Justice, **Stanford Law School**, October 6-7, 1995.
- Commentator, "The Litigious Plaintiff Hypothesis," Industrial and Labor Relations Conference, **Cornell University**, May 19, 1995.
- Commentator on Keith Hylton's, "Fee Shifting and Predictability of Law," Faculty Workshop, **Northwestern University School of Law**, February 27, 1995.

- "The Selection of Employment Discrimination Disputes for Litigation: Using Business Cycle Effects to Test the Priest/Klein Hypothesis," **Stanford University**, Law and Economics Seminars, October 31, 1994.
- "Is the United States at the Optimal Rate of Crime?" Faculty Workshop, **Indiana University School of Law**, Indianapolis, November 18, 1993; Faculty Workshop, **Northwestern University School of Law**, April 18, 1994; Law and Economics Workshop, **Stanford Law School**, April 28, 1994; Meetings of the American Law and Economics Association, **Stanford Law School**, May 13, 1994; **American Bar Foundation**, September 7, 1994; Faculty Workshop, **DePaul Law School**, September 21, 1994; Law and Economics Workshop, **University of Chicago Law School**, October 11, 1994; Faculty Seminar, **Stanford Law School**, October 31, 1994; Law and Economics Luncheon, **Stanford Law School**, November 1, 1994; Faculty Seminar Workshop, **University of Illinois College of Law**, Champaign, November 22, 1994; Law and Economics Workshop, **Harvard Law School**, November 29, 1994; School Alumni Luncheon, Chicago Club, December 13, 1994; **Northwestern Law School**; Law and Economics Workshop, **Yale Law School**, February 1, 1996; Faculty Workshop, **Cornell Law School**, April 10, 1996; Faculty Workshop, **Tokyo University Law School**, June 4, 1996; Panel on "The Economics of Crime," **Western Economics Association** Meeting, San Francisco, July 1, 1996.
- "The Broad Path of Law and Economics," Chair Ceremony, **Northwestern University School of Law**, September 30, 1994.
- Commentator on Paul Robinson's "A Failure of Moral Conviction," **Northwestern University School of Law**, September 20, 1994.
- "The Do's of Diversity, The Don'ts of Discrimination," Kellogg School of Business, **Northwestern University**, May 17, 1994.
- "Does Law Matter in the Realm of Discrimination?" **Law and Society Summer Institute**, Pala Mesa Lodge, Fallbrook, California, June 25, 1993.
- Commentator, "The Double Minority: Race and Sex Interactions in the Job Market," Society for the Advancement of Socio-Economics, **New School for Social Research**, March 28, 1993.
- "The Effects of Joint and Several Liability on Settlement Rates: Mathematical Symmetries and Meta-Issues in the Analysis of Rational Litigant Behavior," Economic Analysis of Civil Procedure, **University of Virginia School of Law**, March 26, 1993.
- Debate with Richard Epstein on Employment Discrimination Law, **Chicago Federalist Society**, February 23, 1993.
- Panel Chair, "Optimal Sanctions and Legal Rules in Tort and Criminal Law," Meetings of Annual Association of Law and Economics, **Yale Law School**, May 15, 1992.
- Panel Member, "The Law and Economics of Employment at Will," **The Institute For Humane Studies**, Fairfax, Virginia, March 27, 1992.
- "The Efficacy of Title VII," Debate with Professor Richard Epstein, **University of Chicago Law School**, February 26, 1992.
- Moderator, "Using Testers to Demonstrate Racial Discrimination," **University of Chicago Law School**, February 13, 1992.

- "Law & Macroeconomics: The Effect of the Business Cycle on Employment Discrimination Litigation," Law and Society Workshop, **Indiana University**, November 6, 1991; Faculty Workshop, **University of North Carolina Law School**, Chapel Hill, November 8, 1991; Faculty Workshop, **Northwestern University School of Law**, December 11, 1991; Law and
- Economics Conference, **Duquesne Law School**, March 14, 1992; **University of Chicago Law School**, April 2, 1992.
- Panel Chair and Commentator, "New Perspectives on Law and Economics," **Society for the Advancement of Socioeconomics**, Stockholm, June 17, 1991; **Law and Society Meetings**, Amsterdam, June 29, 1991.
- Panel Chair, "Regulation of International Capital Markets," **Law and Society Meetings**, Amsterdam, June 27, 1991.
- Panel Chair, "The Law and Economics of Discrimination," American Association of Law and Economics, **University of Illinois Law School**, May 24, 1991.
- "The Economics of Employment Discrimination Law," **Industrial Relations Research Association**, Chicago, Illinois, March 4, 1991.
- "Does Current Employment Discrimination Law Help or Hinder Minority Economic Empowerment?" Debate with Professor Richard Epstein, The Federalist Society, **Northwestern Law School**, February 26, 1991.
- Panel Member, "The Law and Economics of Employment Discrimination," **AALS Annual Meeting**, Washington, D.C., January 6, 1991.
- "Re-Evaluating Federal Civil Rights Policy," Conference on the Law and Economics of Racial Discrimination in Employment, **Georgetown University Law Center**, November 30, 1990.
- "Opting for the British Rule," Faculty Seminar, **Northwestern Law School**, September 11, 1990; Faculty Seminar, **University of Virginia Law School**, September 14, 1990; Law and Economics Seminar, **University of Michigan Law School**, October 18, 1990; Faculty Workshop, **NYU Law School**, November 14, 1990; Faculty Workshop, **University of Florida Law School**, March 18, 1991.
- "The Effects of Fee Shifting on the Settlement Rate: Theoretical Observations on Costs, Conflicts, and Contingency Fees," at the **Yale Law School Conference "Modern Civil Procedure: Issues in Controversy,"** June 16, 1990.
- "Studying the Iceberg From Its Tip?: An Analysis of the Differences Between Published and Unpublished Employment Discrimination Cases," **Law and Society Meetings**, Berkeley, California, May 31, 1990.
- Panel Discussion on Tort Reform, **University of Pennsylvania Law School**, April 27, 1990.
- Panel Discussion of "The Role of Government in Closing the Socio-Economic Gap for Minorities," at the Federalist Society National Symposium on "The Future of Civil Rights Law," **Stanford Law School**, March 16, 1990.
- "Continuous versus Episodic Change: The Impact of Affirmative Action and Civil Rights Policy on the Economic Status of Blacks," **University of Virginia Economics Department**, February 15, 1990; **Princeton University Department of Economics**, February 21, 1990 (with James Heckman); Law & Economics Workshop, **University of Toronto Law School**, October 8, 1991.

- "Sex Discrimination in the Workplace: An Economic Perspective," Fellows Seminar, **American Bar Foundation**, October 16, 1989.
- "The Changing Nature of Employment Discrimination Litigation," Law and Economics Workshop, **Columbia Law School**, March 23, 1989; Faculty Seminar, **University of Virginia Law School**, March 24, 1989; Law and Economics Workshop, **University of Chicago**, April 25, 1989; **Law & Society Meeting**; Madison, Wisconsin, June 8, 1989; Labor Economics Workshop, **University of Illinois**, Chicago, November 1, 1989; Law & Economics Workshop, **University of Pennsylvania Law School**, November 9, 1989; Law and Economics Seminar, **University of California at Berkeley**, October 4, 1990; Law and Social Science Workshop, **Northwestern University**, February 3, 1991; Law and Economics Seminar, **Stanford Law School**, March 21, 1991; Faculty Workshop, **Cornell Law School**, April 3, 1991; Visiting Committee, **Northwestern Law School**, April 5, 1991.
- "Law & Economics: The Third Phase," The Association of General Counsel, **Northwestern University School of Law**, October 14, 1988.
- "Employment Discrimination Litigation," **Northwestern Law School** Alumni Monthly Loop Luncheon. **Chicago Bar Association**, May 31, 1988.
- "The Morality of the Death Penalty." A debate with Ernest Van Den Haag. **Northwestern University School of Law**, April 19, 1988.
- "Models of Deregulation of International Capital Markets." A presentation with David Van Zandt, Faculty Seminar, **Northwestern University School of Law**, April 1, 1988; Visiting Committee, May 5, 1988.
- "Is Title VII Efficient?" A debate with Judge Richard Posner, Faculty Seminar, **Northwestern University School of Law**, November 20, 1987.
- "The Senate's Role in Confirming Supreme Court Nominees: The Historical Record," **Northwestern University School of Law**, September 22, 1987.
- "Diverting the Coasean River: Incentive Schemes to Reduce Unemployment Spells," **Yale Law School** Civil Liability Workshop, March 30, 1987; Faculty Seminar, **Northwestern University School of Law**, March 18, 1987; **University of Southern California Law Center**, May 1, 1987; and Seminar in Law and Politics, Department of Political Science, **Northwestern University**, May 8, 1987; Labor Workshop, Department of Economics, **Northwestern University**, October 27, 1987; **AALS Annual Meeting**, New Orleans, January 7, 1989.
- "Women in the Labor Market--Are Things Getting Better or Worse?" **Hamilton College**, February 23, 1987.
- "The Changing Relative Quit Rates of Young Male and Female Workers," **Hamilton-Colgate Joint Faculty Economics Seminar**, February 23, 1987.
- "Living on Borrowed Money and Time--U.S. Fiscal Policy and the Prospect of Explosive Public Debt," **Orange Rotary Club**, February 22, 1985.
- "Capital Punishment in the Eighties," **Hamilton College**, April 6, 1981.
- "Terms and Conditions of Sale Under the Uniform Commercial Code," Executive Sales Conference, **National Machine Tool Builders' Association**, May 12, 1980.

PROFESSIONAL ACTIVITIES

- Member, Committee on Law and Justice, National Research Council, October 2011 – December 2018.
- Fellow of the Society for Empirical Legal Studies, 2015 - present.
- Co-Editor (with Steven Shavell), American Law and Economics Review, May 2006 – August 2012.
- President, American Law and Economics Association, May 2011 – May 2012.
- Co-President, Society for Empirical Legal Studies, November 2011 - August 2012. Member, Board of Directors from November 2011 - November 2014.
- Testified before the Connecticut Legislature in Support of Senate Bill 1035 and House Bill 6425 (A Bill to Eliminate the Death Penalty), March 7, 2011; Testified again before the Connecticut Judiciary Committee on March 14, 2012.
- Member of the Special Committee on ALI Young Scholars Medal, October 2009 – February 2011.
- Vice-President/President Elect, American Law and Economics Association, June 2010 – May 2011.
- Secretary-Treasurer, American Law and Economics Association, June 2009 – May 2010.
- Board of Advisors, Yale Law School Center for the Study of Corporate Law, July 2004 – August 2010.
- Evaluated the Connecticut death penalty system: “Capital Punishment in Connecticut, 1973-2007: A Comprehensive Evaluation from 4600 murders to One Execution,”
http://works.bepress.com/john_donohue/137/
- Member, Panel on Methods for Assessing Discrimination, National Academy of Sciences, September 2001 – June 2004. Resulting Publication: National Research Council, Measuring Racial Discrimination (2004),
<http://www.nap.edu/catalog/10887.html>
- Member, National Science Foundation Review Panel, Law and Social Sciences, September, 1999 – April 2001.
- Editorial Board, Journal of Empirical Legal Studies, July 2003 – present.
- Editorial Board, International Review of Law and Economics, October 1999 – present.
- Editorial Board, Law and Social Inquiry, February 2000 – present.
- Board of Editors, American Law and Economics Review, August 1998 – April 2013.
- Consultant, Planning Meeting on Measuring the Crime Control Effectiveness of Criminal Justice Sanctions, National Academy of Sciences, Washington, D.C., June 11, 1998
- Member, Board of Directors, American Law and Economics Association, June 1994-May 1997. Member, ALEA Nominating Committee, July 1995-May 1996. Member, Program Committee, July 1996-May 1998 and July 2000 – May 2002.
- Statistical Consultant, 7th Circuit Court of Appeals Settlement Conference Project (December, 1994).
- Testified before U.S. Senate Labor Committee on evaluating the Job Corps, October 4, 1994.

- Assisted the American Bar Association Standing Committee on the Federal Judiciary in evaluating the qualifications of Ruth Bader Ginsburg (June 1993) and David Souter (June, 1990).
- Chair, AALS Section on Law and Economics, January 1990-January 1991.
- Economic Consultant to Federal Courts Study Committee. Analyzing the role of the federal courts and projected caseload for Judge Richard Posner's subcommittee. February 1989-March 1990.
- Member, 1990 AALS Scholarly Papers Committee.
- Member, Advisory Board, Corporate Counsel Center, Northwestern University School of Law. Since December 1987.
- Associate Editor, Law and Social Inquiry. Summer 1987-December 1989.
- Interviewed Administrative Law Judge candidates for U.S. Office of Personnel Management. Chicago, Illinois. May 23, 1988.
- Member, Congressman Bruce Morrison's Military Academy Selection Committee. Fall 1983.
- 1982 Candidate for Democratic Nomination, Connecticut State Senate, 14th District (Milford, Orange, West Haven).

PRO BONO LEGAL WORK

- Death Penalty case: Heath v. Alabama. Fall 1986-Fall 1989.
- Wrote brief opposing death sentence in Navy spy case. Court ruled in favor of defendant on September 13, 1985.
- Staff Attorney, Neighborhood Legal Services, January-July 1981.
- Appealed sentence of death for Georgia defendant to the United States Supreme Court. Sentence vacated on May 27, 1980. Baker v. Georgia.
- Court-appointed representation of indigent criminal defendant in District of Columbia Superior Court, February-July 1980.

RESEARCH GRANTS

- Stanford University Research Fund, January 1997 and January 1998.
- The National Science Foundation (project with James Heckman), December 1992; (project with Steve Levitt), July 1997.
- Fund for Labor Relations Studies, University of Michigan Law School, March 1988.

BAR ADMISSIONS

- Connecticut - October 1977; District of Columbia - March 1978 (Currently Inactive Status); United States Supreme Court - November 1980; U.S. District Court for the District of Connecticut – February 14, 1978.

PROFESSIONAL and HONORARY ASSOCIATIONS

- American Academy of Arts and Sciences (since April 2009).

- Research Associate, National Bureau of Economic Research (since October 1996) – in Law and Economics and Labor Studies.
- American Law Institute (since September 29, 2010).
- Member, Fellows of the Society for Empirical Legal Studies (since October 2015).
- American Bar Association
- American Economic Association
- American Law and Economics Association

PERSONAL

- Born: January 30, 1953.

EXHIBIT B

Recent Trends in American Gun Prevalence*

John J. Donohue III[†] and Isaac J. Rabbani[‡]

June 23, 2017

Abstract

We explore trends in a variety of measures of gun prevalence, including direct surveys, proxies, and economic indicators. We find that firearm ownership, measured at both the individual and household levels, has declined significantly since the 1970s, though concentration of ownership has increased. The decrease seems attributable largely to reduced interest in hunting, as it has been driven by a drop in ownership of rifles and shotguns. Ownership of handguns, which are typically bought for self-defense, has remained stable, despite decreases in crime and in fear of danger.

Introduction

Recent high-visibility incidents involving firearms—especially mass shootings, such as that at Sandy Hook Elementary School—have renewed public interest in firearms legislation. In order to effectively tailor gun policy, it is important to understand the extent of gun prevalence in American society, whether this prevalence has changed over time, and if so, how—all of which have been the subjects of considerable media discussion (Bialik, 2013a; Brennan, 2012; NRA-ILA, 2016). One spokesperson for the National Rifle Association ascribed the drop in violent crime rates over recent decades to the passage of shall-issue laws, claiming that “[i]t would be disingenuous for anyone to not credit increased self-defense laws to account for this decline” (Miller, 2012). Opponents of this position claim that the reduction in crime was due to other factors; that despite the initiation of concealed-carry programs, gun ownership has actually declined; and further, that this decline, reflecting a shift in popular preferences, justifies calls for stricter regulation of firearm sales (Waldman, 2012).

In this paper, we review annual survey data at the national, state, and Census-Division levels, that track the prevalence of firearms in American households. Drawing on the larger gun policy literature, we then examine several commonly used proxy measures for gun prevalence. Both approaches lead to the same conclusions: Gun ownership in the U.S. has undergone a sustained and significant decrease over the past 35 years, and has simultaneously become more concentrated. Finally, we offer potential explanations for this decline, finding that the most salient is an abatement in interest in hunting, and that it is more difficult to judge the effects of other factors.

A Note on Terminology

For the remainder of the paper, we use the terms gun ownership and gun prevalence (or firearm ownership and firearm prevalence) interchangeably. One could argue that the two are actually subtly different: If one were studying the phenomenon of suicide committed by firearm, then perhaps a relevant factor to consider would be how accessible guns are to the everyday person—that is to say, prevalence. On the other hand, if one were studying changes in societal attitudes towards keeping a gun in the home, one might be more interested in the rate of household ownership. In practice, however—in part due to the paucity of data on

*We are extremely grateful to Deborah Azrael, Matthew Miller, Peter Siegelman, and Abhay Aneja for constructive comments, to Stephen Fischer Jr. of the FBI and Jaesok Son of the GSS for guidance on interpreting their data, and to Bhargav Gopal, Maggie Yellen, and Alex Albright for excellent research assistance.

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guns—the literature on this subject tends to use the ownership rate, especially the household ownership rate, as a yardstick for prevalence.

Survey Measures

Perhaps the most widely cited measure of national gun ownership is that of the General Social Survey (GSS), which has collected data on household gun ownership since 1973, and personal gun ownership since 1980, switching between annual and biennial collection in various years (Smith & Son, 2015). The GSS is considered to be one of the most reliable instruments for tracking broad social trends, especially relative to telephone surveys, because of its in-person interview format, large sample size (2,867 respondents in the 2016 survey), high response rates (consistently over 70%), and careful efforts to generate a representative sample of the U.S. population. Figure 1 shows that the GSS data reflect a substantial drop in household gun ownership levels since the late 1970s. In 2016, the GSS-reported percentage of households that contained a gun was 30.8%, a significant drop from a high¹ of 50.4% in 1977. Personal gun ownership, meanwhile, dropped from a peak of 30.5% in 1985 to 20.5% in 2016.

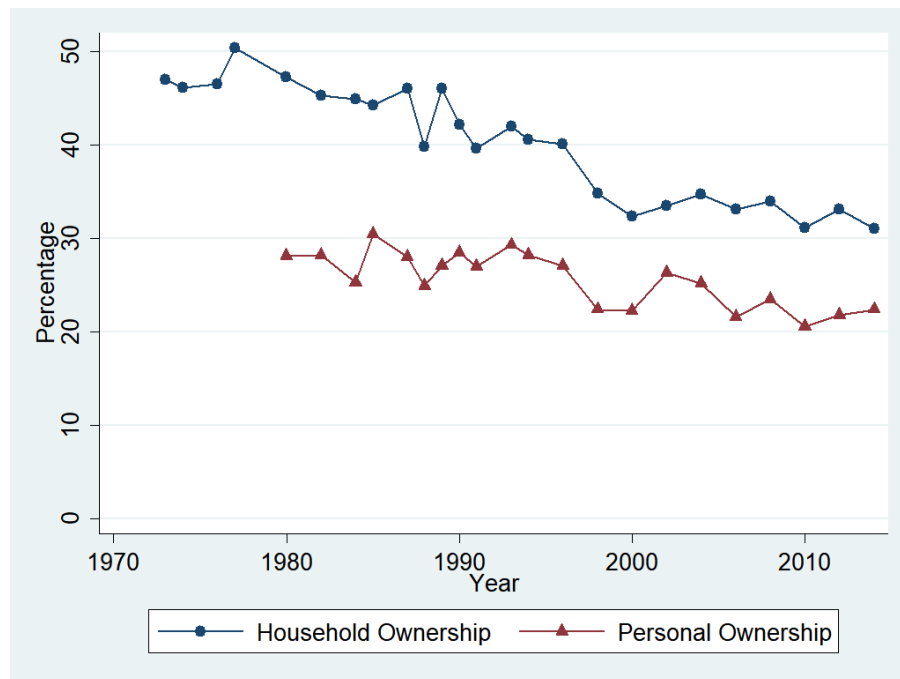


Figure 1: GSS-Measured Trends in Gun Ownership, 1973 - 2016.

The Pew Research Center has tracked gun ownership since 1993, and also reports a significant decrease. In Pew's 1993 survey, 45% responded yes to having a gun in their household (the corresponding GSS rate was 43.8%), and by 2013 this number had fallen to 33% (when the GSS recorded 34.4%) (Pew Research Center, 2013). In a report for the National Opinion Research Center—the organization that conducts the GSS, at the University of Chicago—Smith *et al.* (2014), using the iPoll archive, compile the results of 415 polls conducted between 1959 and 2013 that have surveyed national gun ownership. Going by the 364 of these that estimated a household rate, the authors estimate a decline in household gun ownership of 9 percentage points from the late 1970s to 2013,² and find that the annual trend of abatement is statistically significant and robust to controlling for various survey methodologies.³

¹All maximum and minimum survey values are taken over the entire period for which a survey question is asked.

²The authors use year ranges instead of individual years, and estimate a drop from 48.4% before 1980 to 39.4% in 2006-2013.

³Such methodological variations include in-person interviewing versus telephone interviewing; use of all adults as the polling base, versus restriction to registered voters; and different wordings of gun possession questions.

One major survey that deviates from the GSS, Pew, and the iPoll study is Gallup, which has tracked gun ownership since 1960, but finds a different pattern, as shown in Figure 2 (Gallup, 2015). Essentially, the Gallup surveys suggest that after 1960, gun ownership declined for twenty years, and since then has roughly stayed constant, albeit with some substantial temporary swings. Part of the reason for this volatility could be that the response rates for Pew's and Gallup's surveys—as they are conducted via telephone as opposed to in person—are typically much lower than that of the GSS (Pew Research Center, 2012).

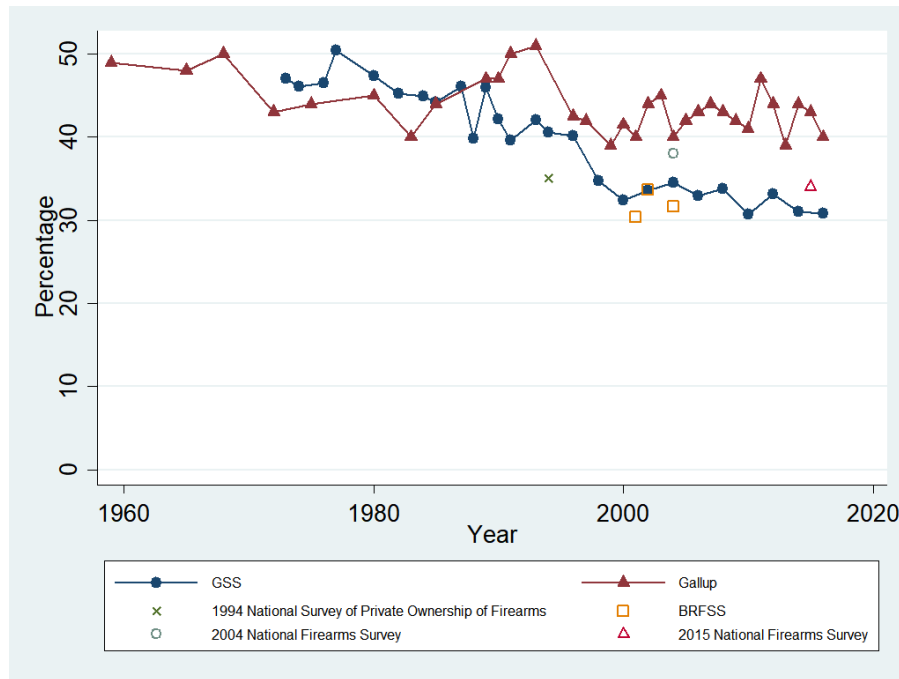


Figure 2: Survey Rates of National Household Gun Ownership, 1959 - 2015.

Criticism of Survey Evidence

The accuracy of survey results for controversial subjects such as gun ownership is often subject to debate. Skeptics of an ownership decline contend that many firearm owners are loath to reveal their true ownership status (Bialik, 2013b). Downward response error could result from fear that one owns or uses a gun illegally (whether or not that is the case), fear that the government will acquire the survey information and secretly maintain a database of gun owners, or from simply not knowing there is a gun in the household at all (National Research Council, 2004). But at least in the past, survey respondents seemed to answer gun questions willingly and accurately. In one survey of concealed-carry permit holders, Smith (2003) found that 94% accurately reported their status. Another experiment found that only 1 of 35 people living at addresses where handguns had recently been registered denied that any kind of gun had been kept in their home (Kellermann *et al.*, 1990).⁴ According to Tom Smith, director of the GSS, less than 1% of respondents have refused to answer the GSS gun ownership question since it started being asked (in 1973); the question is “asked well into [the] survey...They’ve already told us all kinds of things about themselves” (Bialik, 2013a).⁵ Low response rates are also cited as cause for concern, though once again this is principally a problem for telephone surveys, and in any case there is little reason to believe that non-responders are more likely than

⁴31 respondents acknowledged possession of a gun, and the other 3 claimed that a gun was recently kept in their home, but is no longer. False positives were not assessed since only those who had recently registered guns were surveyed. See Rafferty *et al.* (1995) for another example of such evidence.

⁵For further discussion of survey validity and methodologies, see Smith *et al.* (2014) and Chapter 2 of National Research Council (2004)

responders to be gun owners.⁶ Overall, the gun prevalence decline in the GSS data seems most likely to be accurate.

Proxy Measures

Background

Most surveys that include questions on gun ownership are conducted at the national level or within particular states, and are not conducted every year. The GSS, for example, is only constructed to be representative at the levels of the nine Census Divisions and the country. The CDC’s Behavioral Risk Factor Surveillance System (BRFSS), another commonly used state-level survey, only included questions on gun ownership in all states in 2001, 2002, and 2004. Because these limitations often make survey data difficult to employ, especially when analyzing more granular geographic units, firearms researchers have developed several proxy metrics that are highly correlated with survey measures of gun ownership, but cover broader time periods and finer units. In order to build a more complete picture of recent trends in gun ownership, we compile several of these proxies,⁷ namely: the proportion of suicides committed by gun, the circulation rate of the firearm magazine *Guns & Ammo*, the per capita numbers of hunting licensees and federal firearms background checks, and the rate of accidental firearm death among children. Table 1 presents fixed-effects regressions, at the Census-Division and state levels, of the log of the GSS ownership rate on the log of each proxy.⁸ In the appendix, we also present simple pairwise correlation coefficients between national, Census-Division level, and state gun ownership rates and the corresponding proxies.

Criticism of Proxies

It should be noted that Kleck (2004) rejects the use of any gun ownership proxy to analyze inter-temporal trends, claiming that of the twelve proxies he examines, some capture inter-spatial variation in gun ownership, but none captures inter-temporal variation. His methodology, however, is to compare the annual percent change in each proxy to that of the GSS national gun ownership rate. As Hemenway (2012) rightly points out, in doing so he fails to take into account that “year-to-year changes in the GSS national measure of gun ownership...are probably almost entirely ‘noise.’ That changes in no other firearm proxy are highly correlated with this ‘noise’ does not mean other measures are bad (or good) proxies.” As Table 1 and Appendix Table 2 indicate, *levels* of certain proxies are strongly predictive of survey rates at the national and sub-national levels, even after controlling for region- and year-fixed effects.

Proxies

First validated by Miller *et al.* (2001), the fraction of suicides that are committed by gun—abbreviated FS/S, for firearm suicides divided by total suicides—is constructed from the CDC’s National Vital Statistics System’s Fatal Injury Reports, and is available from 1981 to 2015. FS/S has been shown to have strong and significant correlations with survey measures of gun ownership, both cross-sectionally and inter-temporally,

⁶Finally, Smith has said, and we have confirmed, that the rate of respondents refusing to answer the gun ownership questions has increased in recent years. As a check, we created an upper bound rate for which all refusers were assumed to have a gun in their home. For the Census Division-level data, for 180 of 225 observations (80%), this upper bound was at most 5% larger than the regular estimate. For the national-level data, the equivalent statistic is 22 of 25 (88%) observations with a difference below 5%.

⁷While there are specific criticisms against the use of each of the following proxies in statistical analysis, and we will enumerate some of those below, our goal is simply to get a more complete (if blurry) picture of gun prevalence trends. To that end, we defer to the literature, examining some of the proxies that are more commonly used by firearms researchers.

⁸The GSS is not constructed to be representative at the state level. However, note that for three of the five proxies—FS/S, licenses per capita, and circulation per capita—the coefficients at the Census-Division level are similar to those at the state level. This suggests that the state-level results are not too misleading, and that the other two proxies may simply be less reliable (for the reasons described below).

	(1)	(2)	(3)	(4)	(5)
	FS/S	Acc. Gun Death Rate	Licenses per Capita	Circ. per Capita	Checks per Capita
Coefficient	0.626*	0.0573**	0.207**	0.331**	0.609**
	(0.308)	(0.024)	(0.084)	(0.140)	(0.194)
Year Range	1982-2014	1982-1998	1973-2014	1980-2014	2000-2014
Number of Years	20	12	25	9	8
Adjusted R ²	0.438	0.219	0.461	0.395	0.127
N	180	107	225	81	72

All regressions are log-log, and include Division- and year-fixed effects. Standard errors (in parentheses) are clustered by Division.
Number of years used does not correspond exactly to year range due to gap years in administration of GSS gun ownership question.
All nine Census Divisions' data were included in this regression.
* p < 0.10, ** p < 0.05, *** p < 0.01

(a) Census-Division Level

	(1)	(2)	(3)	(4)	(5)
	FS/S	Acc. Gun Death Rate	Licenses per Capita	Circ. per Capita	Checks per Capita
Coefficient	0.593	0.0138	0.221**	0.393**	-0.0327
	(0.522)	(0.042)	(0.089)	(0.188)	(0.020)
Year Range	1982-2014	1982-1998	1973-2014	1980-2014	2000-2014
Number of Years	20	12	25	9	8
Adjusted R ²	0.641	0.642	0.663	0.637	0.577
N	515	286	644	230	203

All regressions are log-log, and include state- and year-fixed effects. Standard errors (in parentheses) are clustered by state.
Number of years used does not correspond exactly to year range due to gap years in administration of GSS gun ownership question.
Regressions are weighted by the number of respondents coming from the state in each year.
Because many states had small numbers of respondents in many years, these regressions include only the 26 states for which at least 10 years exist when the number of respondents from the state was greater than or equal to 20.
Regressions do not include the District of Columbia.
* p < 0.10, ** p < 0.05, *** p < 0.01

(b) State Level

Table 1: Regressions of Gun Ownership Rate on Proxies.

and as a result, has become the most widely-used proxy for the level of gun ownership (Cook & Ludwig, 2006; Briggs & Tabarrok, 2014; Kalesan *et al.*, 2015). Various criticisms have been levelled against its validity (Duggan, 2003; National Research Council, 2004; Shenassa *et al.*, 2006). Perhaps the most serious of these is that if use of a gun to commit suicide, given that it is a more effective method than drug overdose and hanging, is the result of a higher level of suicidal intent, then FS/S could simply be capturing “the average level of suicidal intent in the population” (Kleck, 2004). Furthermore, if suicidal intent is at least partly driven by some latent social unrest or dysfunction, and that unrest also pushes people to acquire guns (perhaps for self-defense), then a spurious positive correlation exists between FS/S and gun ownership. Nonetheless, our results, combined with those of the previously cited studies validating it, give us confidence in using the percentage of suicides by gun to proxy for gun ownership.

The Fatal Injury Reports also contain the rate of unintentional death by firearm, which exists from 1981 to 1998 at the state level, and 1981 to 2015 at the national level.⁹ We use this death rate among children aged 0 to 14 as another intuitive proxy for the level of gun prevalence: The number of unintentional firearm deaths in a given population and unit of time is feasibly a Poisson random variable whose rate parameter is proportional to, or at least increasing in, the availability of guns. One problem with this proxy is that it exhibits significant truncation, as roughly 20% of state-year rates are 0.¹⁰

Duggan (2001) first proposed utilizing per capita circulation of the firearm magazine *Guns & Ammo* as a proxy for gun ownership, and since then the practice has spread (Briggs & Tabarrok, 2014; Siegel *et al.*,

⁹This variable stops at 1998 at the state level because from 1999 on the CDC stopped reporting rates based on fewer than 10 deaths.

¹⁰The measurement of unintentional firearm deaths has also been found to suffer from some degree of error (Barber & Hemenway, 2011).

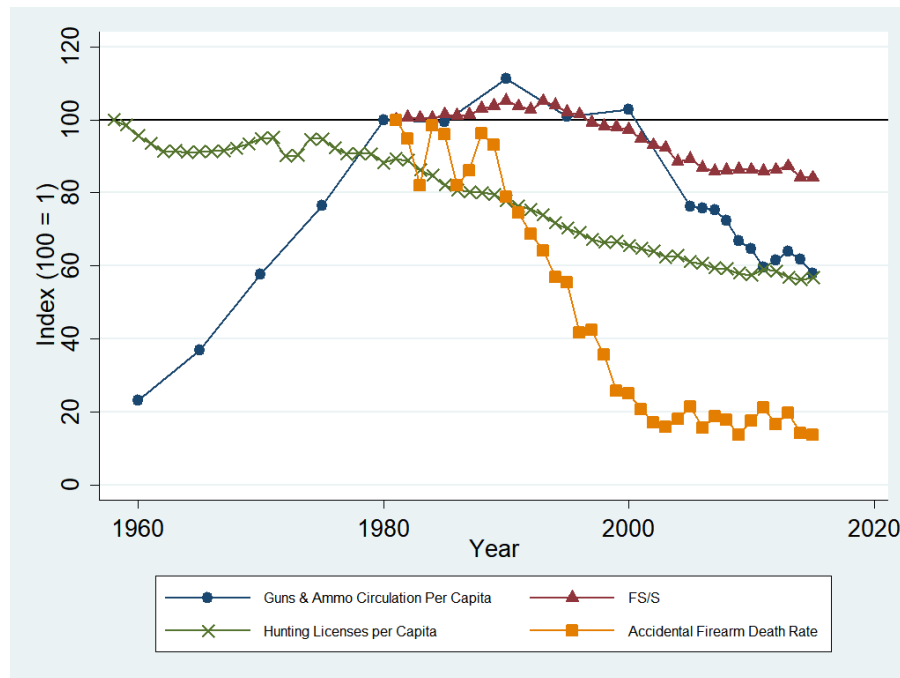


Figure 3: Trends in Gun Ownership Proxies, 1977 - 2015.

2014).¹¹ The magazine is one of the most popular amongst gun enthusiasts, with a total circulation of over 4.5 million in 2015, roughly 90% of which comes from subscriptions. Circulation data, which we have annually from 2005 to 2015, and in five-year increments from 1960 to 2000, is taken from the Alliance for Audited Media.

Siegel *et al.* (2014) introduce a novel proxy for gun ownership, a composite of FS/S with the (per capita) number of hunting license holders, the latter of which is available from the U.S. Fish and Wildlife Service starting in 1958. We look at FS/S and the hunting license measure separately, instead of as a composite. One caveat about this proxy is that it includes license holders who reside in *other* states as well, which means it is inflated for states where many people travel to hunt.¹²

Finally, the per capita number of background checks conducted through the National Instant Criminal Background Check System (NICS) is available from 1999, and has been offered as a proxy for firearm ownership. This measure is only valid if purchase rates for new firearms are proportional to current ownership rates.¹³ Even assuming this proportionality requirement holds, there is reason to be skeptical of the measure's usefulness: For one, NICS checks are only necessarily conducted by federally licensed firearms dealers, whereas a significant portion of gun sales are made through state or private dealers. Since regulations defining precisely which transactions require background checks vary widely from state to state and over time, it is problematic to compare this metric between states or years.

The way check numbers are aggregated is also important. The total number of NICS checks includes, among others, checks that are undergone when one *pawns* her firearm or applies for a firearm permit,¹⁴ as

¹¹Some opt to use circulation of *Field & Stream*, which is more hunting-oriented. We believe that our measure of hunting licenses per capita adequately captures the hunting pathway of gun ownership, and therefore utilize *Guns & Ammo*, which caters to a broader audience.

¹²This proxy is also vulnerable to significant year-to-year fluctuations due to animal movements and the like. However, because we have such a large sample on this variable (57 years for each state), we feel comfortable looking at its long-term trend nonetheless.

¹³One must also assume that each background check represents one gun purchase. Close inspection of the NICS data reveals that most checks for gun sales seem to represent only one gun type—that is, either handgun(s) or long gun(s). However, as the FBI itself warns, “based on varying state laws and purchase scenarios, a one-to-one correlation cannot be made between a firearm background check and a firearm sale.”

¹⁴Thirteen states and the District of Columbia have laws requiring a background check to purchase or possess a firearm (commonly known as “permit-to-purchase” laws). For these states, some proportion of the checks undergone for a firearm

well as administrative checks—essentially system tests—that are run when no firearm transaction is made at all. Moreover, when A sells a gun to B in a private transaction that is subject to a background check, the count of checks is augmented, but there is no change in gun prevalence. (Only the owner of the firearm has changed.) In the last ten years alone, four states—Colorado, Delaware, Oregon, and Washington—have adopted laws mandating universal background checks on private sales, thereby expanding the number of purchases that are counted without increasing the number of guns in circulation. We limit the checks we count to those resulting from the non-private purchases of handguns, rifles, shotguns, other gun types, and multiple gun types.¹⁵

We construct indices of each proxy, indexing values to the first observation of the series within a state or Division,¹⁶ and track their progress over the study period. Figure 3 shows that, at the national level, since 1980 four of our gun prevalence proxies have undergone decreases, ranging from 15% for FS/S to 85% for the accidental firearm death rate. Figure 4 shows a starkly different pattern for firearm background checks. We address this discrepancy in the next section.

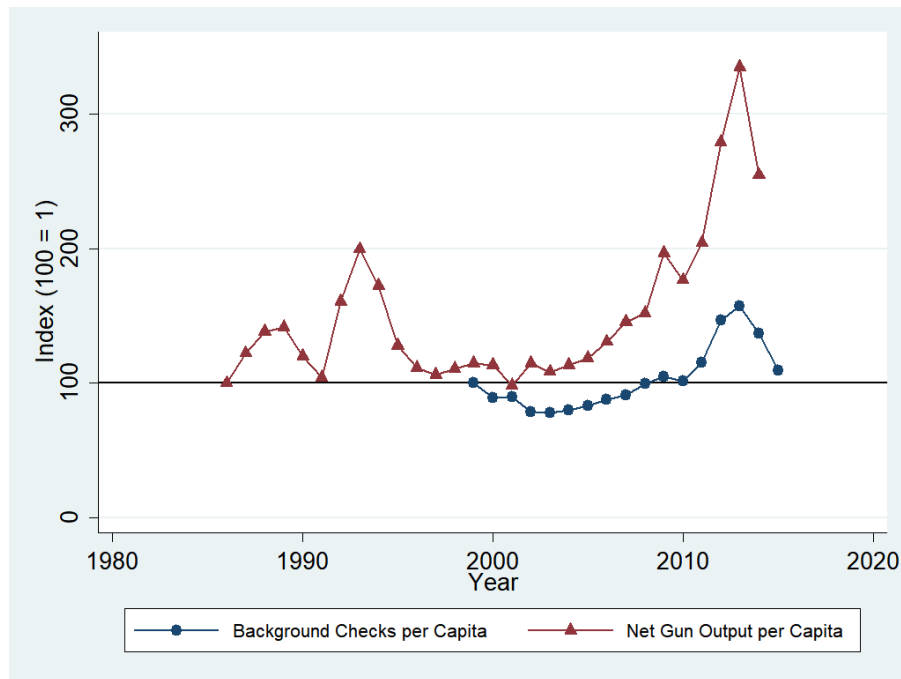


Figure 4: Trends in Gun Sales, 1986 - 2015.

Ownership Concentration

The increase in (per capita) NICS checks seems to indicate that the (per capita) number of guns in circulation has risen considerably, which is consistent with data from the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) U.S. Firearms Commerce Report (Department of Justice, 2015). As Figure 4 shows, per capita net output of firearms, where net output is defined as manufactures plus net imports, has increased

permit actually represent a purchase as well. After reviewing these states' laws, and consulting at length with FBI staff on how exactly checks are counted, we decided not to count permit checks towards the NICS metric, with one exception—Hawaii, which conducts solely permit checks because its firearm dealers opt not to re-check permit holders at the point of sale.

¹⁵To give readers an idea of this dataset, as of 2015, NICS check numbers are broken down into the following categories: Pre-Pawn, Redemption, Returned/Disposition, Rentals, Private Sale, Return to Seller - Private Sale, Permit, and four non-private sale categories representing the type(s) of gun being sold. It is these four columns (plus permit checks, for Hawaii) that go into our metric.

¹⁶The exception is the Guns & Ammo proxy, which we index to its 1980 value, as its initial movements more likely reflect the magazine's initial popularization—circulation began in 1958—than underlying gun ownership trends.

dramatically since the mid-2000s. An increase in privately held guns may seem counterintuitive in light of the evidence that household gun ownership has decreased. However, it is possible, given that the number of households has increased over the study period, that newer households have been less likely to buy guns than existing households, which are acquiring more of them. This would tend to increase the number of firearms in circulation but decrease overall prevalence.

Indeed, there is empirical evidence that individual households have been accumulating multiple firearms. Cook & Ludwig (1997), examining the results of the 1994 National Survey of Private Ownership of Firearms, found that 74% of gun owners owned two or more firearms, and that the 20% of owners who possessed the most guns collectively controlled 55% of privately owned firearms. Ten years later, Hepburn *et al.* (2007), looking at another national survey, found that of all individuals (households) that possessed a firearm, 48% (41%) owned at least four, and that the top 20% of owners controlled 65% of the country's guns. And most recently, in the 2015 iteration of the same survey, Azrael *et al.* (2017) find that 74% of owners have more than one gun, and that the top 20% possess 60% of the stock.¹⁷ Thus to the extent that NICS checks provide a useful proxy, it is crucial that they be interpreted as a proxy for firearm *sales*, and not for ownership, or they will tell a misleading story.

The Mexican Gun Trade

Another factor that compromises the validity of the NICS checks as a U.S. gun prevalence proxy is the scope of the illegal firearms trade, which exports many American-purchased guns to the rest of the world. According to the ATF's Firearms Tracing System, which traces guns recovered at crime scenes and logs their origins, 87,253, or 70.3%, of the firearms recovered in Mexico from 2009 to 2015 came from the US.¹⁸ The Government Accountability Office (2016) finds, further, that most of these had been bought legally at gun shops and gun shows in Texas, Arizona, and California. Another study estimated that from 2010 to 2012, 2.2% of domestic arms sales were attributable to U.S.-Mexico traffic, and 46.7% of federally licensed firearms dealers depended in part on demand from this trade to stay in business (McDougal *et al.*, 2015). To the extent that Mexico-bound guns are bought from federally licensed dealers, which are required to run background checks on unlicensed purchasers, or from state or private dealers that do run background checks, the NICS checks resulting from them artificially inflate the checks per capita proxy.

Explanations

Hunting

The most common purposes that firearm owners give for possessing a gun have consistently been self-protection and hunting (Azrael *et al.*, 2017; Hepburn *et al.*, 2007; Pew Research Center, 2013; Jelen, 2012). (The proportion that cites political beliefs as a reason is quite small.) Thus if gun prevalence has indeed declined on the scale we have suggested—and assuming supply-side factors have remained relatively stable—it is probably due to a decline in either the perceived need for self-defense, interest in hunting, or both. In Figure 5 we plot the evolution of the GSS-reported hunting rate alongside hunting licensees per capita; both indicate that Americans' tastes for hunting have abated steadily and substantially since the late 1970s. Whereas in 1977, 31.6% of adults reported being a hunter or married to one, in 2016 the corresponding rate was only 17.1%.

¹⁷An analysis of California's gun market from 1996 to 2015 finds that among dealerships, sales are highly and increasingly concentrated, with the top dealership handling over 10% of transactions (California Department of Justice, n.d.). If perennial gun buyers tend to stay loyal to particular dealerships over time, then this increase in dealership concentration could be consistent with an increase in ownership concentration, through a smaller gun-buying demographic buying more guns from a smaller pool of sellers.

¹⁸This figure consists of all recovered firearms "that were determined by ATF to be manufactured in the U.S. or legally imported into the U.S. by a Federal firearms licensee" (Bureau of Alcohol & Explosives, 2015, 2016). It is also likely an underestimate, as, for the other 29.7% of recovered firearms, the ATF cannot determine whether "the firearms were imported directly into Mexico, or if the firearms were legally imported into the U.S. or went to another country and then made their way to Mexico by legal or illegal means."

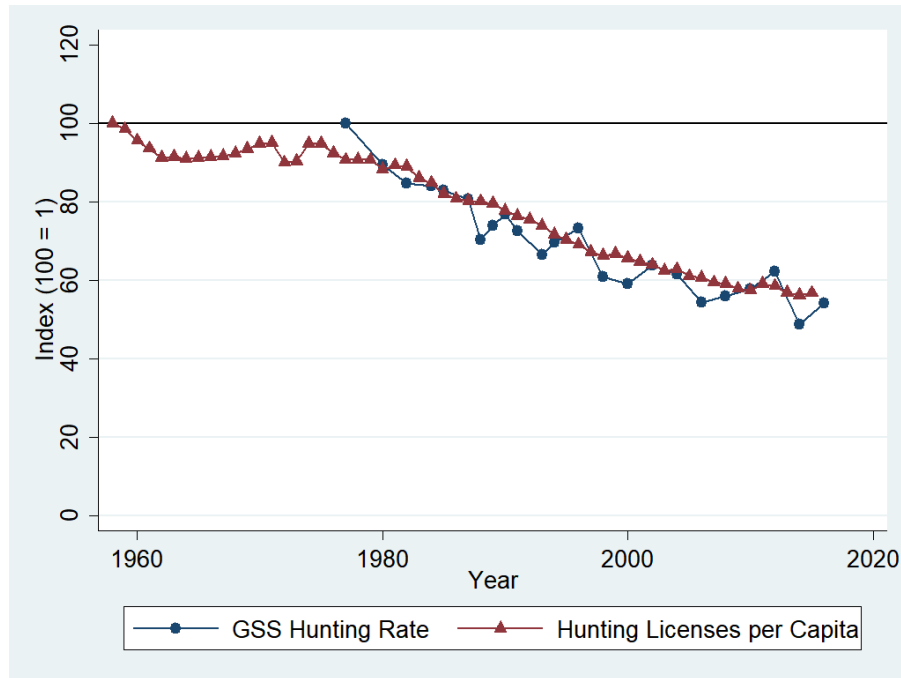
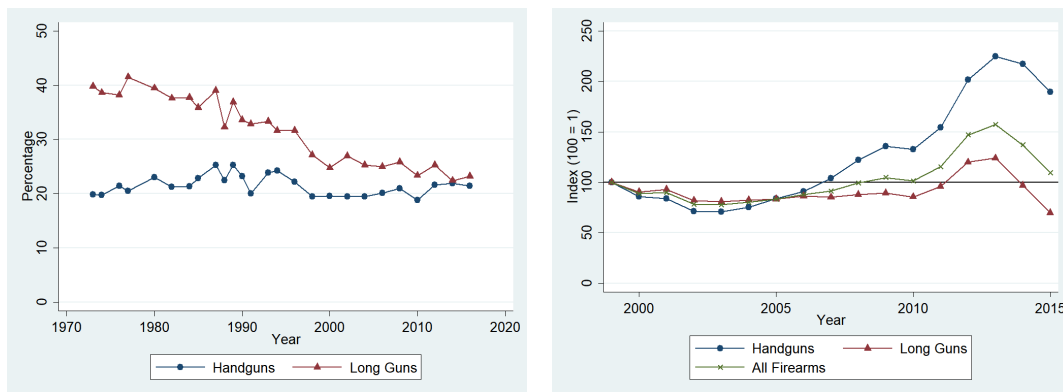


Figure 5: Trends in Hunting, 1977 - 2015.

If gun prevalence has declined through reduced interest in hunting, one would also expect to observe decreases in ownership of long guns—that is, rifles and shotguns—as these are disproportionately used by hunters. And indeed, between 1973 and 2016, the rate of handgun ownership remained relatively stable while that of long guns decreased dramatically, from 39.8% to 23.2% (Figure 6a). Furthermore, when we decompose per capita federal background checks based on whether they went towards handgun or long gun purchases, we find that the increase in checks noted above—and often cited in the press as indicating that overall ownership is actually increasing—has been overwhelmingly driven by increased handgun sales (Figure 6b). As we show in the Appendix, these findings are not confined to a particular region, but are consistent throughout the country.



(a) Household Gun Ownership by Type, 1973 - 2016. (b) Federal Background Checks per Capita, 1999 - 2015.

Figure 6: Handgun and Long Gun Trends.

Demographics

Demographic shifts could also partially explain the decrease in firearm prevalence. If certain groups own guns at systematically lower rates than their complements, and the proportion of the population in the lower-ownership groups increases, then overall gun ownership mechanically decreases as well. This seems a plausible story in the U.S., whose gun ownership rate varies significantly by sex, race, and other dimensions. In particular, going by national GSS ownership data, from 1980 to 2016 gun ownership was on average 31 percentage points higher among males than females, and 12 and 15 percentage points higher among Whites than Blacks and other-race respondents, respectively. The proportion of Whites in the U.S. population has decreased steadily by 10 percentage points since 1970, which would indeed tend to reduce overall gun ownership. The male proportion of the population, however, has actually increased by 1 percentage point since 1980, so shifts in the gender distribution cannot have been a channel of general ownership decreases.

Several publications have reported that interest in firearms and shooting sports has been increasing among women in recent years (Goode, 2013; Mann, 2012). Tabulating gun ownership by demographic, however, we find that female ownership has remained stable between 10 and 14% since 1980 (Figure 7).

Urbanization could also explain part of the gun prevalence decline. In the 2015 National Firearms Survey, 15% of urban, 19% of suburban, and 33% of rural dwellers owned at least one firearm. (Previous iterations of this survey yielded similar relative proportions.) From 1977 to 2015, the percentage of the U.S. population living in Census-designated Metropolitan Statistical Areas increased from 66 to 85%.¹⁹

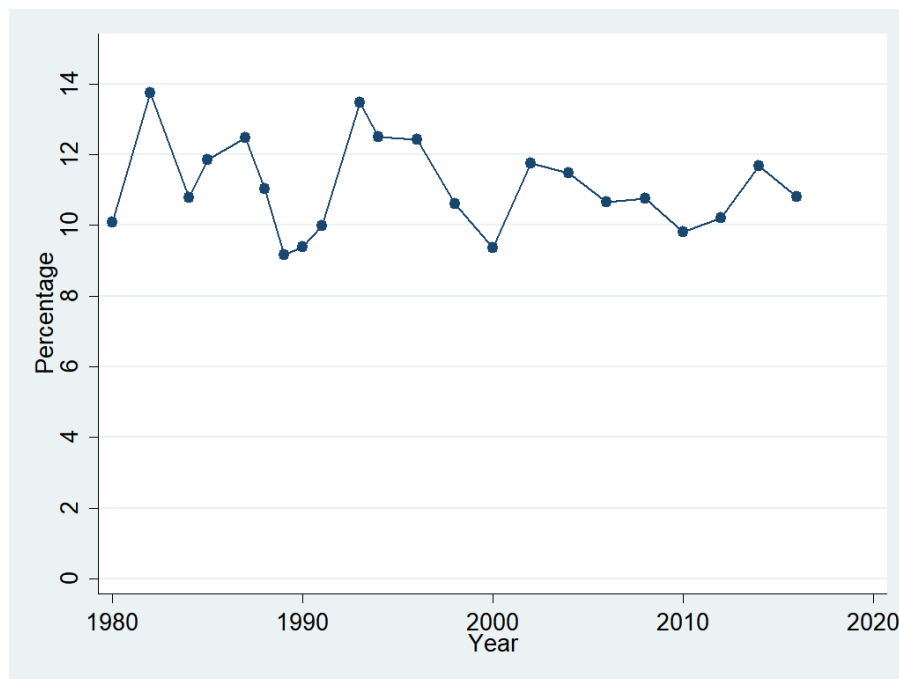


Figure 7: Gun Ownership Among Women, 1973 - 2016.

Crime and Other Factors

Given that a plurality of handgun owners possess handguns for self-defense, it seems likely that handgun ownership in a given time and place is largely determined by the perceived fear of danger there. To track this variable, we examine the GSS question about whether the respondent is afraid of walking around his

¹⁹While part of this could be attributed to non-gun owners self-sorting into urban areas, it is also true that urban jurisdictions tend to have stricter gun laws than rural ones, thereby curtailing ownership among people who may have otherwise had one.

neighborhood at night.²⁰ As one would expect given the large decline in crime that occurred starting in the early 1990s, this measure of fear decreased significantly over a similar period (Figure 8).

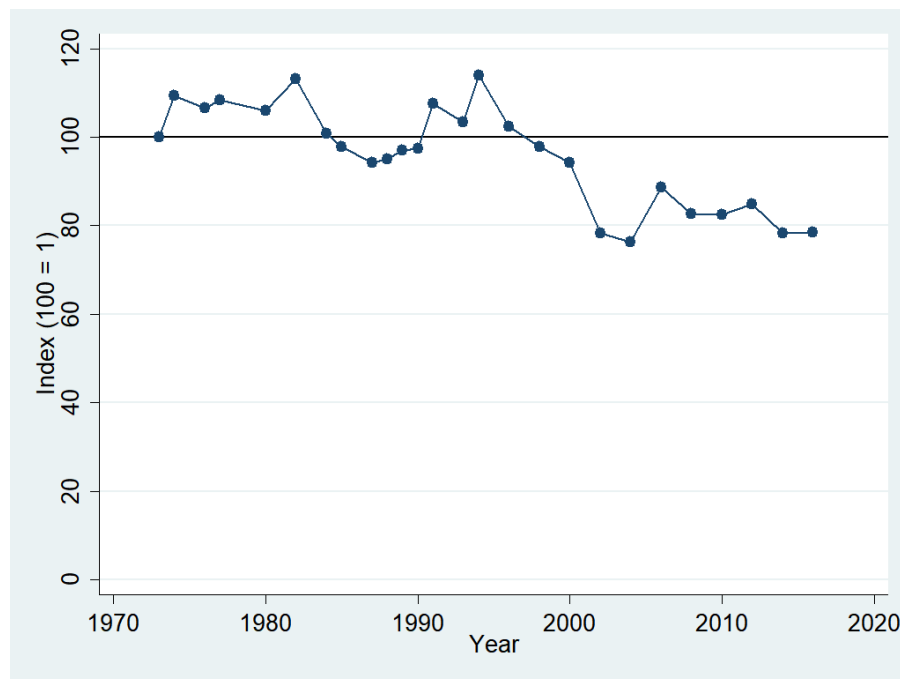


Figure 8: Neighborhood Fear Index.

However, this leaves us with the puzzle of why handgun ownership has remained stable over the study period if crime, as well as the fear resulting from it, have both gone down so dramatically. (Indeed, the decline in hunting also should have contributed to a decrease in handgun ownership.) Going by Figure 9, which plots handgun ownership against the fear rate for each Census Division, it would appear that even within any region, there is no relationship between the two variables. One explanation for this is that we have hitherto ignored (handgun-specific) supply-side dynamics that have served to increase ownership, such as reductions in manufacturing costs or the market becoming less concentrated. The latter is not the case: The Herfindahl-Hirschman Indices for the pistol and revolver markets have not changed significantly since 1986 (Brauer, 2013). The cost explanation is also unlikely, as the price of steel mill products, a strong determinant of costs to gun manufacturers (First Research, 2012), has increased precipitously over the study period, reaching over five times its 1973 level in late-2008 (Bureau of Labor Statistics, 2016). Another possibility is that we have misidentified the direction of causality: Perhaps reduced fear of danger does not significantly reduce the desire to own a handgun, but owning a handgun does reduce one's fear—and this mechanism is prevalent enough to scale up to a general trend. Finally, because much of the wear-and-tear on a firearm occurs through the number of rounds fired, and handguns bought for concealed-carry or home self-defense purposes are not likely to be fired very many times (especially relative to long guns bought for target shooting or hunting), it is plausible that the average handgun would last much longer than the average long gun (perhaps by decades),²¹ resulting in the trends documented above.

²⁰The exact wording is: "Is there any area right around here—that is, within a mile—where you would be afraid to walk alone at night?"

²¹There is little hard data on the life spans of different guns or their determinants, but the bulk of opinions shared on online firearm enthusiast forums suggest that certain parts in every gun need to be replaced after some number of rounds are fired, and that this "round ceiling" is the main limiting factor on a firearm's longevity.

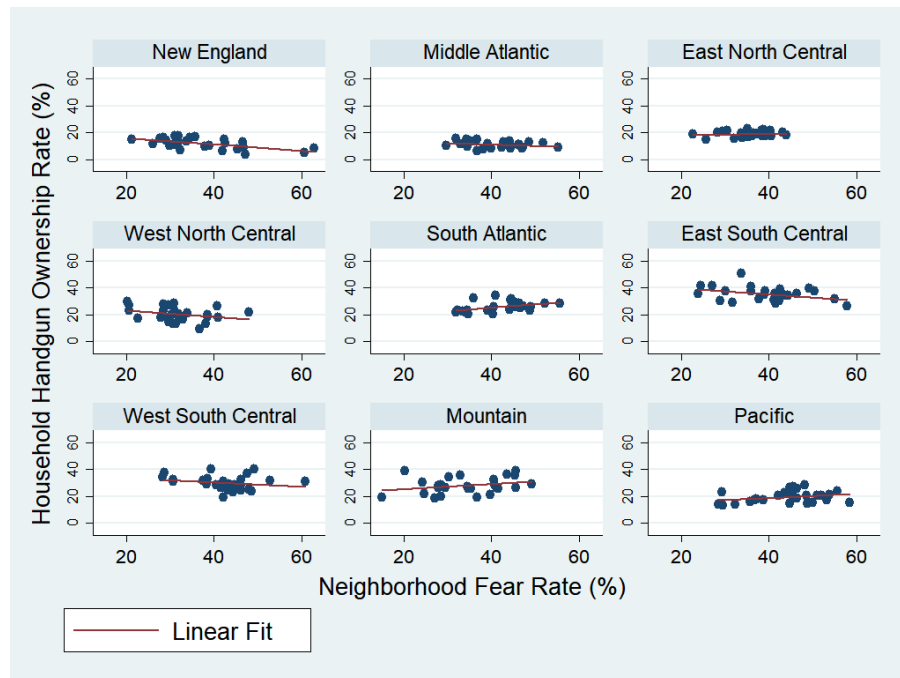


Figure 9: Handgun Ownership and Neighborhood Fear by Census Division. $r = -0.013$

Conclusion

Those advocating weaker regulations on guns often claim that gun ownership has increased substantially since the early 1990s, and that the concurrent drops in violent crime rates can be attributed to this trend (National Rifle Association, 2010). And indeed, the claim that violent crime is down is accurate: From 1990 to 2015, the national murder, aggravated assault, and robbery rates have dropped by roughly 48, 44, and 60%, respectively. However, for the nation as a whole and for 7 of 9 Census Divisions, gun ownership also seems to be down considerably—though those with guns have acquired larger stocks.

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Appendix

Proxy Correlations

Table 2 presents pairwise correlations, at the state, Census Division, and national levels, between the gun ownership proxies and a survey measure of gun ownership. At the state level, proxies are compared to gun ownership as captured by the BRFSS household rate in 2001, 2002, and 2004, while at the Census Division and national levels, the GSS household rate is the survey metric. Because correlations at the state level between our proxies and the BRFSS ownership rate are based on only three years of data, it is important to note that they largely capture inter-spatial, rather than inter-temporal, similarities. The same issue does not exist at the coarser levels, since we have national and Census Division-level ownership rates for many more years.

	BRFSS		GSS
Licenses per Capita	0.792***	FS/S	0.836***
NICS Checks per Capita	0.806***	Accidental Death Rate	0.830***
FS/S	0.770***	Licenses per Capita	0.694***
		Circulation per Capita	0.576***
		NICS Checks per Capita	0.639***
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$		* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$	
(a) State Level		(b) Census-Division Level	

	GSS
FS/S	0.822***
Accidental Death Rate	0.932***
Licenses per Capita	0.945***
Circulation per Capita	0.734
NICS Checks per Capita	-0.422
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$	
(c) National Level	

Table 2: Correlations Between Surveyed Gun Ownership Rates and Proxies.

Regional Trends

One potential objection to our claims would be that the national trends illustrated above mask significant regional heterogeneity. Perhaps it is only in certain areas that the prevalence of long guns has decreased relative to that of handguns, or perhaps the decline in overall ownership is confined to relatively populous regions (whereas other areas have even experienced increases). As it turns out, data at the Census Division level confirm that these patterns are mostly consistent across regions. In Figures 10, 11, and 12 we reproduce three of the previous charts, plotted for each individual Census Division. (Figure 13 is a map of the Divisions.) With the exceptions of two Divisions, it appears that the decreases in access to firearms and interest in hunting, as well as the convergence between handgun and long gun ownership rates, are not limited to a particular area, but are present throughout the country. The exceptions, New England and West North Central, are also the only Divisions for which we also do not observe a downward trend in prevalence.

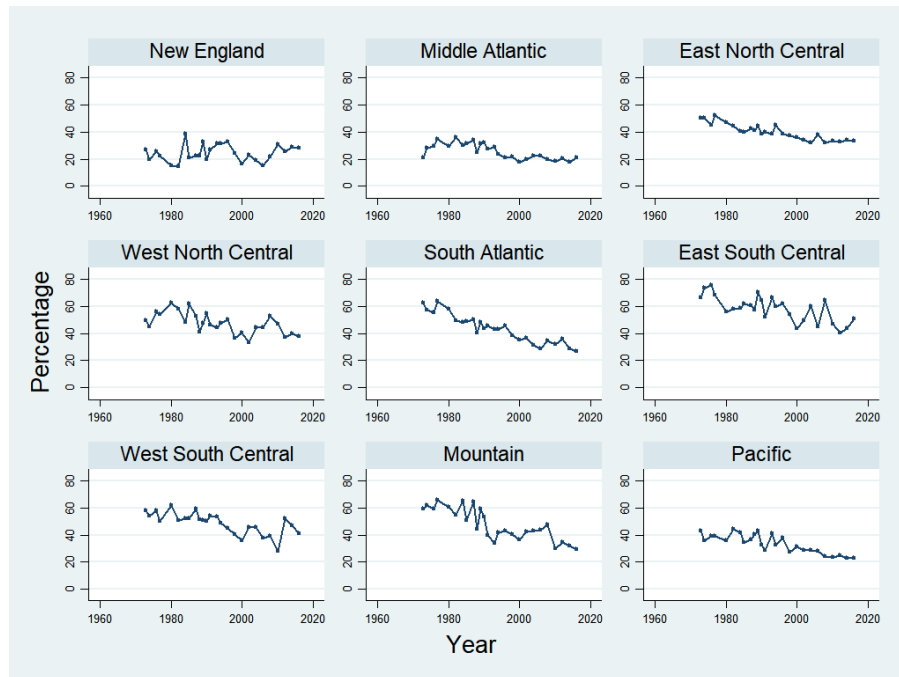


Figure 10: Household Gun Ownership by Census Division, 1973 - 2016.

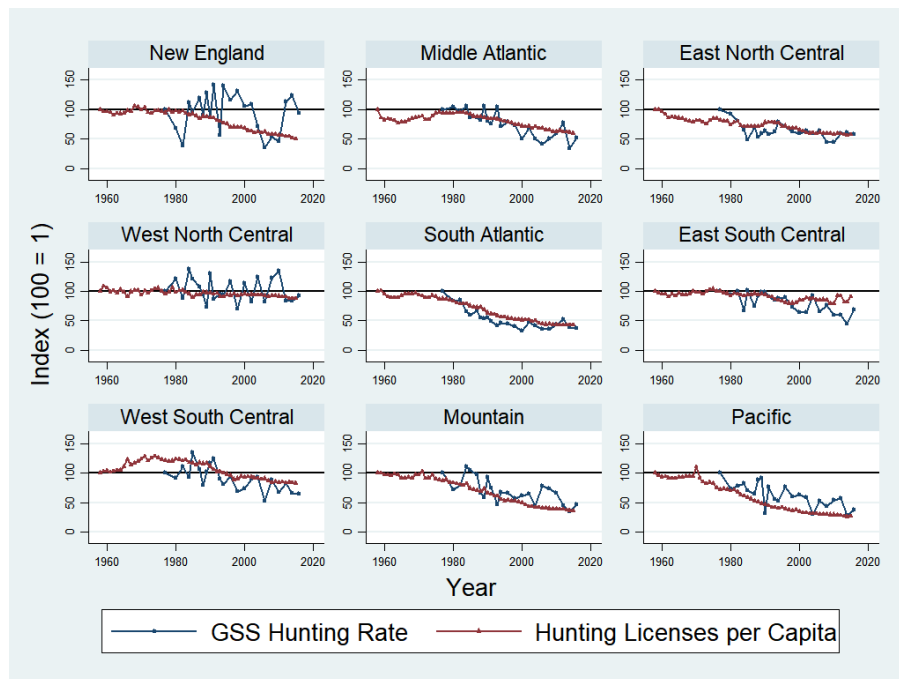


Figure 11: Trends in Hunting by Census Division, 1977 - 2015.

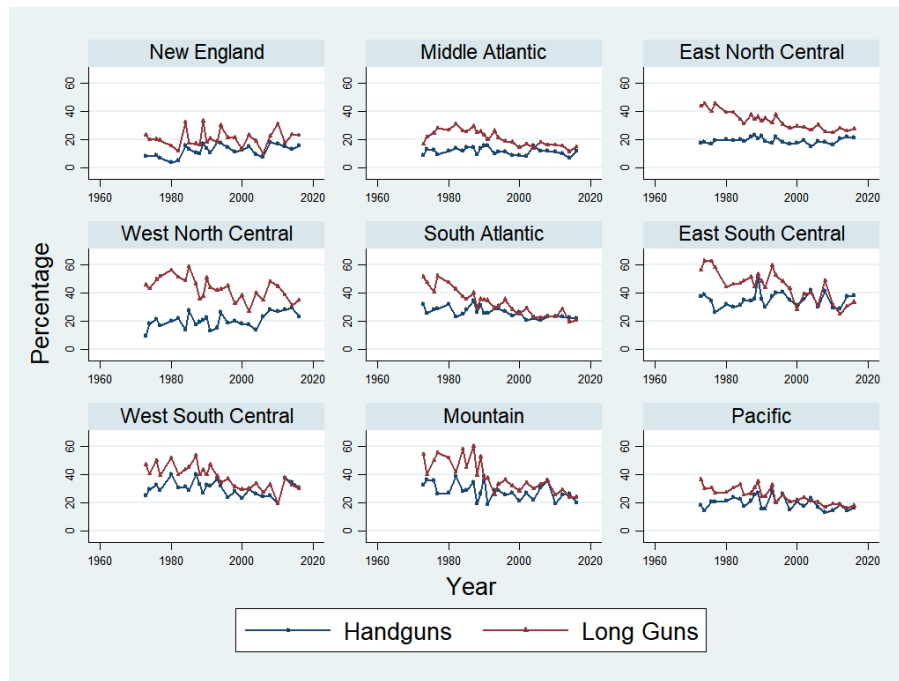


Figure 12: Household Gun Ownership by Type and Census Division, 1973 - 2016.

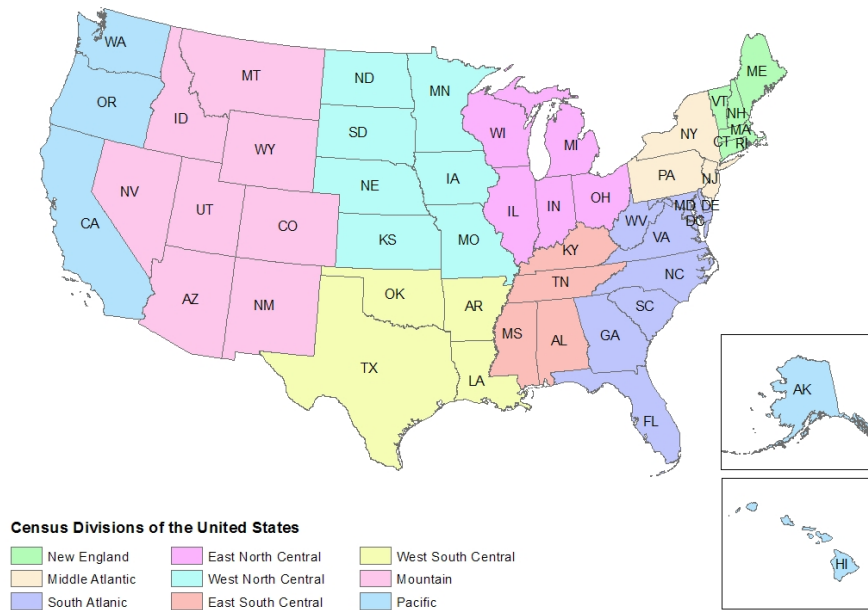


Figure 13: Map of Census Divisions. Courtesy of Iowa State University.

EXHIBIT C

The Stock and Flow of U.S. Firearms: Results from the 2015 National Firearms Survey



DEBORAH AZRAEL, LISA HEPBURN, DAVID HEMENWAY,
AND MATTHEW MILLER

Since the mid-1990s, the U.S. civilian gun stock has grown from approximately 192 million (65 million handguns) to approximately 265 million (113 million handguns). In 2015, gun owners owned more weapons and were more likely to own both handguns and long guns than in 1994. As in 1994, ownership in 2015 was highly concentrated: the median owner owned two, but the 8 percent of all owners who owned ten or more accounted for 39 percent of the stock. Approximately seventy million firearms changed hands within the past five years (from 2011 to 2015); most were purchased. Two and a half percent of Americans had guns stolen within the past five years, accounting for an estimated five hundred thousand guns per year.

Keywords: firearms, guns, gun stock, handguns

In 2015, 36,252 people died of a firearm-related injury in the United States, approximately the same number of deaths as occurred in motor vehicle crashes. The same year, more than eighty thousand people were nonfatally injured (CDC 2017). The distribution of firearm deaths in 2015 is typical of the distribution over

the past several decades: the majority of firearm deaths were suicides (22,018), followed by homicides (13,463) and then unintentional firearm injuries (fewer than one thousand). By contrast, of the more than eighty thousand nonfatal firearm injuries, 60,470 were assault related, 15,928 were unintentional (self or

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other) injuries, and fewer than 3,320 were acts of deliberate self-harm that proved nonlethal.

The firearms involved in these injuries, and the millions more not involved in any injuries, all start out as legally manufactured or imported guns introduced into the primary market through federally licensed dealers. Subsequently, these firearms may exchange hands through private sales, some of which involve federally licensed dealers, or through gifts, inheritance, or nonpurchase transfers such as theft or borrowing, arrangements that characterize the underground gun market (as Cook and Pollack describe in the introduction).

Beyond that, little more is known about these guns than that they are owned by roughly one in five U.S. adults and can be found in approximately one of three U.S. households. In fact, the most recent peer-reviewed nationally representative survey that focused on details about firearms other than these two basic measures of exposure was conducted in 2004 (Hepburn et al. 2007). Between 2004 and today, we know that the proportion of adults who personally own firearms (and the proportion who live in households with guns) has continued to decline, modestly but steadily, largely because of a decline in personal gun ownership by men. In 2014, for example, the National Opinion Research Center's General Social Survey, an annual survey that every other year or so includes the same two questions (about personal and household firearm ownership) estimated that 22 percent of U.S. adults personally owned a firearm (35 percent of men and 12 percent of women) and that 31 percent of American households included at least one firearm, compared with 28 percent of U.S. adults (50 percent of men and 10 percent of women) and 47 percent of U.S. households in 1980 (Smith and Son 2015).

Although the National Opinion Research Center's General Social Survey and other surveys have asked respondents whether they personally own a firearm or live in a home with firearms, few have asked about the *number* of guns respondents own, let alone more detailed information about these firearms and the people who own them, such as reasons for firearm ownership, where firearms were acquired, how much firearms cost, whether they are carried

in public, and how they are stored at home (Smith and Son 2015; Gallup 2016; Morin 2014). Because of this, the best and most widely cited estimates of the number of firearms in civilian hands are derived from two national surveys dedicated to producing detailed, disaggregated, estimates of the U.S. gun stock, one conducted in 1994, the other in 2004 (Cook and Ludwig 1997, 1996; Hepburn et al. 2007). In the 1994 survey, sponsored by the National Institute of Justice, Philip Cook and Jens Ludwig estimated that American civilians owned approximately 192 million firearms, approximately one-third of which (sixty-five million) were handguns. In 2004, using a random-digit dial survey toward the end of an era when most Americans had land lines and answered their telephones, we estimated that U.S. adults owned approximately 283 million firearms (more than four per owner), 40 percent of which were handguns. These two surveys, taken together, suggested several important trends in firearm ownership between 1994 and 2004: a steady increase in the number of firearms in civilian hands, a growing proportion of the U.S. gun stock represented by handguns, and concentration of firearms among fewer gun owners.

Less is known about the movement of firearms between people than about the gun stock. Firearm manufacturing data provide one measure of the annual number of new guns available to be purchased (flow of new guns into the market); other data collected by the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) provide a related, but overlapping measure: the annual number of adults who undergo a background check before acquiring (or attempting to acquire) one or more guns. Other movements of firearms, such as dispositions by the police and military, are not centrally recorded (Wright, Rossi, and Daly 1983; Cook and Ludwig 1996). The National Crime Victimization Survey (NCVS) collects information on firearm theft (Langton 2012; Rand 1994). Recent estimates suggest that between 2005 and 2010 approximately 250,000 guns were stolen annually (Langton 2012). No single source provides an estimate of the flow of guns, however. In consequence, as with the gun stock, the best available evidence to date regarding the frequency of gun transfers and

the number of guns transferred comes from the 1994 and 2004 surveys.

To learn more about private ownership and use of firearms in the United States today, as well as to characterize where and the extent to which new and used firearms have exchanged hands over the past five years, we conducted the first nationally representative survey of firearm ownership and use in more than a decade—the 2015 National Firearms Survey (NFS). In this article, we focus on features related to the gun stock (such as its size, composition, and distribution and the reasons for private gun ownership) and on salient aspects of firearm transfers between parties, such as where current firearm owners acquired their most recent firearm, by type of gun and recency of acquisition.

METHODS

Data for this study come from the NFS, a national web-based survey (N=3949) designed by the authors and conducted in January 2015 by the survey research firm Growth for Knowledge (GfK). Respondents were drawn from GfK's KnowledgePanel (KP), an online panel that includes approximately fifty-five thousand U.S. adults.¹ The KP panel is selected on an ongoing basis, using an equal probability of selection design, to provide samples, after minor adjustments for deviations from equal probability se-

lection (base weights), that are representative of the U.S. population. Prior to selection of a study sample, GfK adjusts panel base weights to account for any discrepancies between panel composition and the distribution of key demographic characteristics of the U.S. population as reflected in the most recent Current Population Survey (GfK 2013).²

KP panel members complete an initial demographic survey and then periodic subsequent surveys, answers to which allow efficient panel sampling and weighting for future surveys. For the NFS, the study target population comprised adults eighteen years or older who fell into one of three groups: gun owners, non-gun owners living in a gun-owning household, or non-gun owners living in a non-gun-owning household, ascertained from the demographic surveys. An additional target population was veterans, who could fall into any of the three groups. To sample this population, GfK targeted respondents who met the criteria in GfK profile surveys and reconfirmed their gun ownership and veteran status within the survey. The final study weights provided by GfK combined pre-sample weights with a set of study-specific poststratification weights accounting for oversampling and for survey non-response.³

For this survey, 7,318 KP panel members received an invitation to participate. Of these,

1. As discussed at greater length later, historically, most estimates of gun ownership come from either random-digit dial telephone surveys or, in the case of the General Social Survey, in-person interviews of respondents. Online panels such as KP have been used increasingly in the social science literature to overcome the cost and response rate limitations of these survey modalities.

2. GfK structures recruitment for the KP with the goal of having the resulting panel represent the adult population of the United States with respect to a broad set of geodemographic distributions including particular subgroups of hard-to-reach adults (for example, those without a landline telephone or those who primarily speak Spanish). Panel members are randomly recruited through probability-based sampling, and participating households are provided with access to the Internet and hardware if needed. GfK recruits panel members by using address-based sampling (previously, GfK relied on random-digit dialing methods). For selection of general population samples from KP, GfK uses an equal probability of selection method design by weighting the entire KP to the benchmarks from the latest March supplement of the U.S. Census Current Population Survey. The geo-demographic dimensions used for weighting the entire KP typically include sex, age, race, ethnicity, education, census region, household income, home ownership status, metropolitan area, and Internet access. Using these weights as the measure of size for each panel member, in the next step a probability proportional to size procedure is used to select study specific samples. Application of the proportional to size procedure methodology with the above measure of size values produces fully self-weighting samples from KP, for which each sample member can carry a design weight of unity.

3. After the study sample was selected and fielded and all of the survey data were edited and made final, design weights were adjusted for any survey nonresponse (to the initial and to the supplemental survey) as well as for

3,949 completed the survey, yielding a survey completion rate of 54.6 percent.⁴ In contrast, nonprobability, opt-in, online panels typically achieve a survey completion rate between 2 percent and 16 percent (Callegaro and DiSogra 2008). All panel members except those serving in the U.S. armed forces at the time were eligible to participate. Invitations to participate were sent by email; one reminder email was sent to nonresponders three days later. Participants were not given any specific incentive to complete this survey, although GfK has a point-based program through which participants accrue points for completing surveys and can later redeem them for cash, merchandise, or participation in sweepstakes. The final sample consisted of gun owners ($n=2,072$), non-gun owners in gun households ($n=861$), and non-gun owners ($n=1,016$). The sample also included 1,044 veterans, distributed across the three gun ownership groups.

Following earlier work, our estimates of the

magnitude and distribution of the U.S. gun stock, as well as gun transfers and theft, come from the reports of those who personally own guns (Cook and Ludwig 1997; Hepburn et al. 2007). Gun owners were identified through two questions: “Do you or does anyone else you live with currently own any type of guns?” followed by, among all respondents who answered in the affirmative, “Do you personally own a gun?” Gun owners were then asked about the types of guns they owned (handguns, divided into pistols and revolvers), long guns, and other guns) and the number of each type. Respondents were also asked about the main reasons they owned guns, as well as about their most recent firearm acquisition, including whether they bought the gun or acquired it in some other way (such as an inheritance), and whether, and if so how many, guns had been stolen from them in the past five years.⁵ Data for this article come from respondents who personally own guns.

any under- or overcoverage imposed by the study-specific sample design. For this study, the following strata of gun ownership from weighted KP data and veteran status from the 2014 veteran supplemental survey of the census Current Population Survey were used for the raking adjustment of weights: gender by age (eighteen to twenty-nine, thirty to forty-four, forty-five to fifty-nine, sixty to sixty-nine, or seventy and older); census region (Northeast, Midwest, South, West) by metropolitan area (yes or no); gender by veteran status (yes or no); age (eighteen to twenty-nine, thirty to forty-four, forty-five to fifty-nine, sixty to sixty-nine, or seventy and older) by veteran status (yes or no); race-Hispanic ethnicity (white or non-Hispanic, black or non-Hispanic, other or non-Hispanic, two or more races and non-Hispanic, Hispanic) by veteran status (yes or no); census region (Northeast, Midwest, South, West) by veteran status (yes or no); metropolitan area (yes or no) by veteran status (yes or no); education (less than high school or high school, some college, bachelor's or greater) by veteran status (yes or no); household income (less than \$25,000, \$25,000 to less than \$50,000, \$50,000 to less than \$75,000, \$75,000 or more) by veteran status (yes or no); Internet access (yes or no) by veteran status (yes or no); veteran serving year (less than two years, two to three years, four to nine years, or ten or more years); armed services branch (Air Force, Army, Coast Guard or Marines or other, Navy). An iterative proportional fitting (raking) procedure was used to produce final weights aligned with respect to all strata simultaneously. In the final step, calculated weights were examined to identify and, if necessary, trim outliers at the extreme upper and lower tails of the weight distribution. The resulting weights were then scaled to the sum of the total sample size of all eligible respondents.

4. The 55 percent participation rate, according to GfK, is within the expected range for its surveys and does not signal that recruitment for this survey was particularly difficult. We did not add incentives because the participation rate was unexceptional. In surveys of this sort the participation rate can be artificially inflated by waiting a longer time for eligible parties to respond or contacting eligible members of the panel with reminders. We did not need to do so as we hit our target number of participants within a short period.

5. Each gun-owning respondent was asked separately for handguns and long guns: “What are the main reasons you own . . . ?” Response categories were as follows: “1) For protection against strangers; 2) For protection against people I know; 3) For protection against animals; 4) For hunting; 5) For other sporting use; 6) For a collection; 7) For some other reason.” Respondents could check multiple responses and provide a free text answer if they indicated that a main reason for owning guns was “other.” Respondents who reported that they owned other guns were asked to indicate a single primary reason they owned these guns.

A supplement to our survey was conducted by GfK in November 2015. For the supplement, all gun owners from the original survey ($n=2072$) who were still in the KP panel ($n=1880$) were invited to answer an additional set of questions about the timing of their most recent gun acquisition, the number of guns they had acquired in the previous five years, and the number of guns stolen from them in the previous five years.⁶

Of those eligible for the survey ($n=1,880$), 1,613 responded (86 percent). The respondents to the supplemental survey did not differ from respondents to the original survey with respect to age, gender, race, type of gun most recently acquired, or acquisition patterns. Nonresponders ($n=267$) were more likely than responders to be younger and female and to have acquired their most recent firearm as a gift or inheritance than by purchase. Respondents to the original survey who were no longer in the GfK panel ($n=192$) were more likely to be younger and have refused to describe the type of gun they most recently acquired than those in the original sample. They were also less likely to have purchased their most recent firearm. These differences did not affect the overall similarities between the supplemental and original samples. We use a supplemental survey weight provided by GfK for analyses using the supplemental survey.

The Northeastern University Institutional Review Board approved this study.

RESULTS

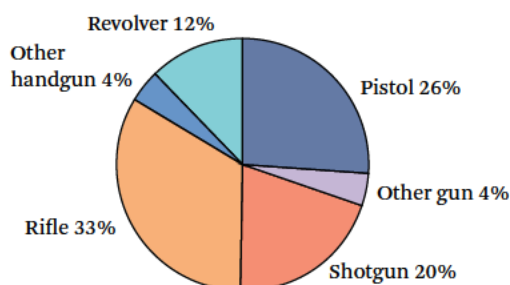
Results from the NFS detail the U.S. gun stock, including its size, distribution, and reasons for gun ownership, as well as gun transfers, including sales and theft.

6. Respondents were asked "When you completed the prior national firearms survey, sponsored by Northeastern University, in April 2015, you said that the gun you acquired most recently was a [insert type based on type noted in the April 2015 survey]. Thinking about this gun, approximately when did you acquire it?" Three options were offered: "1) Within the past two years; 2) Between two and five years ago; 3) More than five years ago." The second question was "What was the exact year that you acquired this gun?" Respondents were asked to specify the exact year or to report that they did not know what year.

7. Including or excluding those who reported being a gun owner but reported owning no guns, or calculating the mean number of guns per gun owner including those who reported owning no guns, does not materially change our estimates (21.8 percent personal gun ownership; mean number of guns, 4.7).

8. We did not ask respondents to specify what type of gun. Other guns might include single-shot "black powder" guns or machine guns.

Figure 1. U.S. Gun Stock by Gun Type



Source: Authors' tabulations based on the National Firearms Survey.

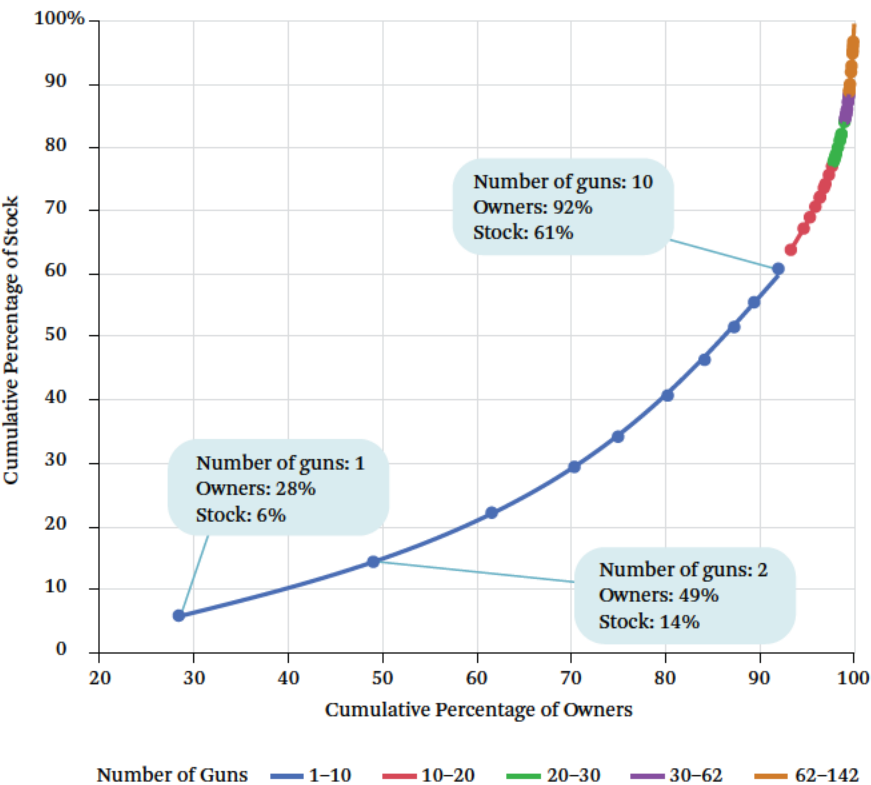
The Gun Stock

Twenty-two (22) percent of our sample reported that they personally owned a gun. Extrapolating to the U.S. population of adults age eighteen and older (245,157,000 in 2014) (Colby and Ortman 2015), we estimate approximately 54.7 million gun owners in the United States (CI: 50.7–58.8). Sixty respondents who said that they owned guns did not answer our questions about how many guns they owned. We use results from the 2012 respondents who did provide an answer to estimate the mean number of guns owned by gun owners: 4.8 (CI: 4.37–5.32), yielding a gun stock of 265 million (CI: 245 million to 285 million).⁷

Number and Types of Guns in U.S. Gun Stock

Of the estimated 265 million guns in civilian hands in the United States, approximately four in ten (42 percent) are handguns, the remainder primarily (53 percent) long guns (4 percent are "other" guns).⁸ Among handguns, the majority are semiautomatic pistols (62 percent) and revolvers (29 percent); the remainder are described by respondents as "other" hand-

Figure 2. Cumulative Distribution of Gun Stock



Source: Authors’ tabulations based on the National Firearms Survey.

guns. Approximately six in ten long guns (62 percent) are rifles and four in ten (38 percent) are shotguns (see figure 1).

Distribution of Gun Ownership

Gun-owning respondents owned an average of 4.8 firearms (range: 1 to 140); the median gun owner reported owning approximately two guns. As seen in figure 2, approximately half (48 percent) of gun owners report owning one or two guns, accounting for 14 percent of the total U.S. gun stock, while those who own ten or more (8 percent), own 39 percent. Put another way, half of the gun stock (approximately 130 million guns) is owned by approximately 86 percent of gun owners, and the other half

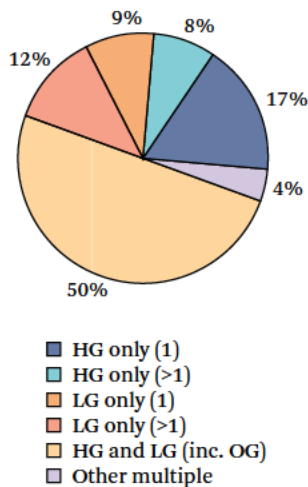
is owned by 14 percent (14 percent of gun owners equals 7.6 million adults, or 3 percent of the adult U.S. population).⁹

Distribution of Gun Ownership, by Gun Type

Although the majority of guns in the U.S. gun stock are long guns, in terms of the distribution of gun types, only one in five gun owners (21 percent) own long guns only, 25 percent of gun owners own handguns only (2 percent report own “other guns” only), and half of gun owners own both handguns and long guns (44 percent) or handguns, long guns, and other guns (6 percent). The remainder of gun owners (4 percent) reported owning either “other guns” along with handguns or long guns, or

9. About one quarter (22 percent) of gun owners reported that one of the primary reasons they owned a firearm was as part of a collection, although the large majority of those who cited owning guns for a collection also cited other reasons for owning (for example, 72 percent of collectors also said they owned guns for protection). Not surprisingly, gun collectors owned more guns than those who do not collect guns (ten versus three guns), and gun collectors accounted for most of the upper range of number of guns owned (noncollectors owned one to forty-three guns; collectors owned between one and 140).

Figure 3. U.S. Gun Ownership by Number and Type of Firearm



Source: Authors’ tabulations based on the National Firearms Survey.

did not specify.¹⁰ Among those who own handguns only, two-thirds (67 percent) own one gun; for those owning long guns only, 43 percent own only a single gun (see figure 3).

Distribution of Gun Ownership by Gun Owner Demographics

Table 1 describes the demographic characteristics of respondents who own handguns only, long guns only, and both handguns and long guns (for simplicity of presentation, it does not include the small number of respondents (ninety-one) who are not in one of these three categories). The demographic characteristics of gun owners have been well established in multiple surveys. Consistent with these surveys, we find that gun owners overall are disproportionately male, white, older, non-urban, and from the South.

Differences among gun owners emerge, however, when those who own handguns only and those who own long guns only are compared with those who own both types. Handgun-only owners, in particular, appear to be a distinct group: they are more likely to be female, nonwhite, and living in urban areas, and are less likely to have grown up in a house

with a gun compared to other gun owners. For example, whereas approximately 20 percent of long gun owners are female, among gun owners who own handguns only, 43 percent are women, versus 13 percent of long gun owners and 14 percent of those who own both.

Reasons for Gun Ownership

Almost two in three gun owners (63 percent) reported that one of the primary reasons they own their guns is for protection against people (not shown). Three-quarters of handgun owners (76 percent) reported that they owned one primarily for protection (not shown). Other reasons include hunting (40 percent), collecting (34 percent), sporting use (28 percent), protection against animals (20 percent), and some other reason (40 percent). Other reasons volunteered by respondents included gift or inheritance or the right to have them (see table 2).

Reasons for ownership varied significantly depending on the types of guns respondents owned (handguns only, long guns only, or both) and demographic characteristics. Overall, those who own only handguns or both handguns and long guns were similar to one another with respect to protection, whereas those who own only long guns and those who own both were similar with respect to hunting and sporting use. For example, almost 80 percent of people who own handguns cite protection against strangers as a reason for ownership, as do 72 percent of those who own both handguns and long guns, but only 31 percent of those who own only long guns do. Likewise, 2 percent of those who only own handguns report that hunting is a primary reason for gun ownership, while 57 percent of those who only own long guns and 55 percent of those who own handguns and long guns do.

Across demographic characteristics, female gun owners were more likely than their male counterparts to report owning any gun for protection and less likely to report owning a gun for any other reasons (see table 2). Reasons for ownership were relatively consistent across age groups, although owning a gun for protection was less common among older gun owners,

10. Other guns may include single-shot black powder guns or machine guns.

Table 1. Demographic Characteristics of Gun Owners

Demographic (Percent Total Survey Population)	Any Firearm	Handgun Only	Long Gun Only	Both
All respondents	22	6	5	11
Age				
Eighteen to twenty-nine (19.1)	13	3	4	6
Thirty to forty-four (23.5)	21	6	4	10
Forty-five to fifty-nine (28.2)	24	6	5	13
Sixty or older (29.2)	25	6	5	14
Sex				
Male (48.3)	32	7	8	18
Female (51.7)	12	5	2	5
Race				
White (70.5)	25	5	6	13
Hispanic (11.7)	16	6	3	7
Black (11.0)	14	8	1	5
Multiracial (1.4)	25	4	6	15
Other (5.5)	8	3	<1	5
Marital status				
Married (54.0)	26	6	6	14
Never married (23.6)	12	3	3	5
Divorced (9.2)	23	6	5	12
Living with partner (6.9)	19	6	4	9
Widowed (5.4)	21	5	4	12
Separated (1.0)	24	14	2	8
Community				
Urban (23.0)	15	6	3	7
Suburban (50.3)	19	6	4	10
Rural (26.1)	33	5	9	19
Education				
Less than high school (10.5)	11	4	3	5
High school (29.5)	23	6	5	12
Some college (28.6)	26	6	5	15
College (31.4)	20	5	5	10
Annual income				
Less than 25,000 (16.9)	13	4	3	6
25,000–59,999 (29.2)	22	6	5	11
60,000–99,999 (27.6)	24	7	4	12
100,000 or more (26.3)	25	5	6	14
Military service				
Veteran (9.7)	44	10	9	25
Non-veteran (90.3)	19	5	4	10
Political views				
Liberal (20.2)	14	5	3	7
Moderate (46.3)	19	6	4	9
Conservative (31.5)	30	6	7	17

(continued)

Table 1. (continued)

Demographic (Percent Total Survey Population)	Any Firearm	Handgun Only	Long Gun Only	Both
Region				
Northeast (18.3)	15	3	4	7
Midwest (22.4)	23	4	6	12
South (36.9)	25	8	4	13
West (22.4)	20	5	4	11
Child under eighteen				
Yes (29.8)	19	5	7	9
No (70.2)	23	6	5	12
Grew up with a gun				
Yes (47.5)	35	7	8	20
No (48.0)	9	4	2	3
Don't know (3.2)	17	9	4	4

Source: Authors' compilation based on the National Firearms Survey.

Note: Reported values are percentage of respondents indicating ownership of the specified firearm.

Table 2. Given Reasons for Gun Ownership

	Protection From			Other Sporting Use	Collection	Other
	People	Animals	Hunting			
Gun type						
Handgun only, 1	0.78	0.10	0.03	0.00	0.16	0.03
Handgun only, >1	0.83	0.12	0.01	0.00	0.18	0.01
Long gun only, 1	0.36	0.14	0.46	0.17	0.11	0.46
Long gun only, >1	0.27	0.20	0.65	0.41	0.21	0.65
Handgun and long gun	0.72	0.27	0.55	0.47	0.36	0.55
Sex						
Male	0.60	0.20	0.49	0.32	0.37	0.44
Female	0.69	0.21	0.32	0.21	0.28	0.32
Age						
Eighteen to twenty-nine	0.60	0.21	0.38	0.26	0.39	0.38
Thirty to forty-four	0.67	0.18	0.41	0.30	0.38	0.41
Forty-five to fifty-nine	0.65	0.24	0.41	0.27	0.33	0.41
Sixty or older	0.58	0.18	0.41	0.29	0.32	0.41
Census region						
Northeast	0.53	0.18	0.40	0.29	0.37	0.40
Midwest	0.55	0.16	0.51	0.38	0.36	0.51
South	0.73	0.23	0.37	0.25	0.28	0.37
West	0.56	0.18	0.35	0.25	0.42	0.35

Source: Authors' tabulations based on the National Firearms Survey.

and more common among those from the South.

Gun Transfers

In addition to characterizing the stock of firearms in civilian hands, our survey provided information on the flow of guns in the United States over the past five years, including gun acquisitions, dispositions, and theft.

Firearms Acquisitions

We asked current gun owners a series of questions about the firearm they had acquired most recently. Approximately half said within the past five years (28 percent within the past two years, 21 percent between three and five years ago) and half (50 percent) more than five years ago (see tables 3, 4, and 5). Extrapolating to the U.S. population, we estimate that U.S. firearm owners acquired approximately seventy million guns in the past five years.¹¹

The large majority of gun owners purchased their most recently acquired gun, with purchase more common for guns acquired in the past one to two years (86 percent) than for those acquired more distally (79 percent two to five years ago, 61 percent more than five years ago). Across all three periods, the most commonly acquired firearm was a handgun, with handguns constituting almost six of ten guns acquired in the past five years, and five of ten guns acquired more than five years ago. Stores (gun

stores, sporting good stores, and so on) were the most common source of purchased guns, while gifts and inheritance were the most common form of nonpurchase transfer.

Firearms most recently acquired by gun owners tended to be new rather than used (see tables 6, 7, and 8). The proportion of new guns was higher among those acquired more recently; used guns account for four of ten firearms acquired more than five years ago, but only three of ten acquired in the past two years. The majority of new guns were purchased (89 percent in the past two years, 91 percent two to five years ago, 78 percent more than five years ago). Among used guns, nearly six of ten acquired more than five years ago were not purchased, versus only one-third of those acquired within the past two years. Inherited guns constitute 40 percent of used guns acquired more than five years ago, but only 16 percent of those acquired in the past two years, mirroring a decrease in the overall share of guns obtained by inheritance from 21 percent of those acquired more than five years ago to 4 percent of those acquired in the past two years.

The cost of the most recent firearm purchased (among respondents whose most recently acquired gun was purchased) was relatively evenly distributed around the mode of \$250 to \$500 (see table 9). Overall, used guns were less expensive than new guns and guns acquired longer ago were less expensive than

11. The NFS asked respondents who reported that they were current gun owners to describe when they acquired their most recently acquired firearm still in their possession and, separately, how many guns they had acquired in the past five years (regardless of whether those guns were still in their possession). Some respondents reported that they had acquired one or more guns during the past five years even though they had previously indicated that their most recent firearm acquisition (among the guns they currently owned) took place more than five years ago. Overall, when directly asked when they had most recently acquired a gun in their possession, 49 percent of people reported doing so within the past five years, whereas 62 percent said that they had acquired one or more firearms in the past five years when prompted to provide the number of firearms acquired (irrespective of whether those guns were still in their possession). In estimating that seventy million firearms were acquired over the past five years, we privileged the stem question to mitigate the well-established phenomenon of telescoping (that is, we excluded from our five-year estimate the 23 percent of respondents who reported acquiring at least one gun in the past five years yet also indicated their last acquisition was more than five years ago) (see table A1). Including respondents who initially reported that their most recent acquisition was more than five years ago increases our estimate of the total number of guns acquired over the past five years to eighty-five million. One possible explanation for this discrepancy is the tendency to telescope, which may have inflated the latter estimate. Alternatively, since only the second question explicitly asked respondents to consider guns that are no longer in their possession, these guns may have been excluded when respondents considered the first question.

Table 3. Distribution of Where Current Owners Acquired Most Recent Firearm, Less Than Two Years (28 Percent)

	All Guns (100%)	Handguns (59%)	Long Guns (40%)
Percent purchased at or from			
Any store	62	65	54
Family	2	3	1
Friend or acquaintance	6	6	7
Gun show	4	3	5
Pawn shop	5	4	6
Online	2	2	2
Other	3	3	4
All purchased firearms	84	86	79
Percent nonpurchased transfers			
Gift	8	8	9
Inheritance	4	3	8
Trade	0	0	0
Other	5	4	6
All nonpurchased firearms	17	15	23
All transfers	100		

Source: Authors' tabulations based on the National Firearms Survey.

Table 4. Distribution of Where Current Owners Acquired Most Recent Firearm, Two to Five Years Prior (21 Percent)

	All Guns (100%)	Handguns (60%)	Long Guns (39%)
Percent purchased at or from			
Any store	54	48	58
Family	3	2	4
Friend or acquaintance	9	11	8
Gun show	3	4	2
Pawn shop	6	7	3
Online	1	1	2
Other	3	3	4
All purchased firearms	79	76	81
Percent nonpurchased transfers			
Gift	11	16	8
Inheritance	8	6	9
Trade	1	0	0
Other	1	2	6
All nonpurchased firearms	21	24	19
All transfers	100		

Source: Authors' tabulations based on the National Firearms Survey.

Table 5. Distribution of Where Current Owners Acquired Most Recent Firearm, More Than Five Years Prior (50 Percent)

	All Guns (100%)	Handguns (51%)	Long Guns (48%)
Percent purchased at or from			
Any store	42	42	42
Family	3	2	3
Friend or acquaintance	7	9	5
Gun show	2	3	2
Pawn shop	3	4	2
Online	<1	1	0
Other	3	4	2
All purchased firearms	61	65	57
Percent nonpurchased transfers			
Gift	15	13	15
Inheritance	21	17	25
Trade	0	0	1
Other	3	4	2
All nonpurchased firearms	39	34	43
All transfers	100		

Source: Authors’ tabulations based on the National Firearms Survey.

Table 6. Percentage of Where Current Owners’ Most Recent Transfer Occurred, Less Than Two Years (28 Percent)

	Percent Transfers (100%)	New (71%)	Used (26%)
Percent purchased at or from			
Any store	62	78	16
Family	2	0	6
Friend or acquaintance	6	1	19
Gun show	4	3	6
Pawn shop	5	2	11
Online	2	1	5
Other	3	3	4
All purchased firearms	84	89	67
Percent nonpurchased transfers			
Gift	8	6	12
Inheritance	4	0	16
Trade	0	0	0
Other	5	5	5
All nonpurchased firearms	17	11	33
All transfers	100		

Source: Authors’ tabulations based on the National Firearms Survey.

Table 7. Percentage of Where Current Owners’ Most Recent Transfer Occurred, Two to Five Years Prior (21 Percent)

	Percent Transfers (100%)	New (61%)	Used (37%)
Percent purchased at or from			
Any store	54	79	10
Family	3	1	6
Friend or acquaintance	9	1	23
Gun show	3	3	3
Pawn shop	6	3	10
Online	1	1	2
Other	3	3	2
All purchased firearms	79	91	56
Percent nonpurchased transfers			
Gift	11	9	20
Inheritance	8	0	20
Trade	1	0	1
Other	1	1	0
All nonpurchased firearms	21	10	41
All transfers	100		

Source: Authors’ tabulations based on the National Firearms Survey.

Table 8. Percentage of Where Current Owners’ Most Recent Transfer Occurred, More Than Five Years Prior (50 Percent)

	Percent Transfers (100%)	New (71%)	Used (26%)
Percent purchased at or from			
Any store	42	69	9
Family	3	0	6
Friend or acquaintance	7	1	15
Gun show	2	3	2
Pawn shop	3	1	5
Online	1	1	0
Other	3	4	3
All purchased firearms	61	78	40
Percent nonpurchased transfers			
Gift	15	14	15
Inheritance	21	3	41
Trade	0	0	1
Other	3	3	2
All nonpurchased firearms	39	20	59
All transfers	100		

Source: Authors’ tabulations based on the National Firearms Survey.

Table 9. Cost of Purchased Firearms, in U.S. Dollars

	\$0–99	\$100–249	\$250–499	\$500–999	\$1,000 or more
All	4.2	18.0	48.1	25.1	4.6
Handguns	3.1	14.3	50.3	29.6	2.7
Long guns	5.1	22.8	45.4	19.3	7.5
New	2.5	14.3	49.9	28.0	5.3
Used	9.1	29.1	41.9	17.3	2.7
Five years or less	2.3	11.6	48.6	30.2	7.4
More than five years	6.9	26.1	46.7	18.6	1.7
Protection from strangers	3.6	15.3	51.0	27.1	3.1
Hunting	4.2	24.5	45.7	18.9	6.7
Sport shooting	6.7	15.3	48.9	25.2	5.0
Collection	2.6	17.7	42.4	28.2	9.0

Source: Authors’ tabulations based on the National Firearms Survey.
Note: All figures in percentages.

those purchased more recently. The most commonly cited reason for buying a firearm was self-protection, a reason more common for those purchased within the last five years (43 percent) than more than five years ago (35 percent).

Firearm Dispositions

Approximately 5 percent of gun owners reported that they had sold or otherwise gotten rid of a gun in the past five years (the average number of guns disposed of was two). Of these, the large majority (71 percent) had sold the gun they disposed of most recently, 13 percent had given the gun as a gift, and 10 percent had traded it for something else. A few who had disposed of a gun (1 percent) reported having gotten rid of it in a buy-back program. When gun owners sold guns, they most often sold them to a friend directly (35 percent) or to a gun dealer (32 percent), 12 percent reporting that they had sold the gun via an online advertisement and another 14 percent having sold it to a family member (not shown).

Firearm Theft

Approximately 2.4 percent of gun owners (CI: 1.6–3.6) reported having had one or more stolen from them in the past five years, the mean number at 1.9 (a range of 1 to 6). Assuming that theft was evenly distributed across the years, we estimate that approximately 2.3 million

guns were stolen over the past five years (five hundred thousand annually).

DISCUSSION

In 1994, when the National Survey of Private Ownership of Firearms (NSPOF) was conducted, Philip Cook and Jens Ludwig estimated an approximate 192 million guns in the hands of U.S. civilians (1997). In 2015, we estimate that that number has grown by more than seventy million to approximately 265 million. The guns acquired over the past twenty years are disproportionately handguns, the share of which in the total gun stock is now 42 percent, versus approximately 33 percent in 1994.

The shift we observe in the gun stock toward a greater proportion of handguns may reflect the decline in hunting and a change in motivations for firearm ownership and use (Smith 2001). Indeed, a perceived, and growing, need for self-protection appears to drive contemporary gun ownership in the United States (Pew Research Center 2013). Consistent with our finding that the majority of the guns that have been added to the gun stock are handguns and that gun owners in 2015 were more likely than gun owners in 1994 to report that they owned any handgun primarily for self-protection (76 percent versus 48 percent), we find that almost 70 percent of gun owners report that a primary reason for owning a gun is protection against people. Consistent with this

trend, we find that respondents who owned only handguns were just as likely to live in an urban environment as a rural one, and to be demographically more diverse than owners of long guns (who, as a group, are more likely to be white, male, and rural).

Not only are there many more guns overall, there are also more gun owners (approximately 55 million from the NFS compared to approximately 44 million from the NSPOF), although the percentage of the adult population that owns guns has declined from 25 percent in the 1994 NSPOF (no confidence interval provided), to 22 (CI: 21–24) percent in 2015.¹² Indeed, gun owners today each own, on average, more guns (4.8 in the NFS versus approximately 4.3 in the NSPOF). Moreover, gun ownership appears to be somewhat more concentrated in 2015 than it was in 1994: the top 20 percent of gun owners owned 55 percent of the gun stock in 1994; they now own 60 percent.

In the absence of a gold standard against which to compare our estimates (of the sort that would render survey-based estimates largely unnecessary), two sources of administrative data—from the ATF and FBI—provide an opportunity to grossly validate results (ATF 2015; FBI 2016). Firearm manufacturing and import-export data available from the ATF suggest that, from 1899 through 2013 (the last year for which data are available), approximately 363 million firearms have been available for sale in the United States (see table A1).¹³ Although guns are highly durable, it is reasonable to ex-

pect that every year some fraction is permanently removed from the marketplace through seizure, irrecoverable loss, or breakage. Following Cook, applying a 1 percent per year depreciation (permanent removal from use) rate to the available manufacturing data yields an estimated gun stock in 2013 of approximately 270 million (Cook 1993; Cook and Goss 2014). Assuming the number of guns was added to the market in 2014 (the last full year before our survey) was the same as the number added in 2015 (sixteen million, the largest number of guns manufactured or imported in U.S. history), the estimate of the U.S. gun stock (using the ATF data) increases to 285 million, close to the 265 million we estimate from our survey.¹⁴

Our estimate that approximately seventy million firearms changed hands within the past five years is also broadly consistent with estimates derived separately using—first—ATF data on firearm manufacturing, imports, and exports (which should track our estimates of new firearms acquired), and—second—National Instant Criminal Background Check System (NICS) background check data (which should correspond to the number of people who acquired firearms and underwent a background check). Given the percentage of people in the NFS who report that their most recently acquired gun was new (rather than used) and assuming that new guns correspond to the firearms that the ATF report enumerates, the total number of firearms acquired over the past five years should be approximately eighty-two mil-

12. A similar decline has been reported from the General Social Survey, in which personal gun ownership declined from 28 percent in 1994 to 22 percent in 2014 (Smith and Son 2015).

13. The data series presented in table A1 combines a summary (1899–1968), assembled from ATF reports on manufacturing plus imports (Newton and Zimring 1968), ATF data compiled by Gary Kleck (1969–1986, 1991), and the remainder from online ATF data (ATF 2015).

14. The NSPOF estimate of 192 million guns in 1994 is also remarkably consonant with ATF data up to 1994, applying the same 1 percent annual removal from market estimate. However, our estimate is 30 percent, not 15 percent lower than ATF figures. The estimate of approximately 270 million guns from our 2004 random digit dial telephone survey, appears to be an overestimate. Extrapolating from surveys to the U.S. population, especially for relatively rare events (such as owning an extremely large number of guns), has been shown to have the potential to lead to large overestimates. In the 2004 survey, two factors came into play: first, by 2004 RDD surveys were increasingly plagued, as our survey was, by low response rates, suggesting the possibility that even with the application of poststratification weights, results may not have been generalizable (and thus suitable for extrapolation) to the U.S. population. Second, because ownership of large numbers of guns is relatively uncommon, our estimates of the gun stock were sensitive to the inclusion (or exclusion) of respondents who reported that they owned large numbers of guns.

lion.¹⁵ Our estimates based on ATF data may be an underestimate because they were calculated based on commerce data from a five-year period ending in 2013, the most recent year for which ATF data were available (and sales have been accelerating upward). Nonetheless, our estimates using NICS data are remarkably similar: eighty-three million (derived using our published finding that approximately 75 percent of gun owners who acquired their most recent firearm within the past five years underwent a background check for that acquisition, not shown).¹⁶

Our estimate of the number of guns stolen annually also squares well with external data sources, although our estimate that five hundred thousand guns are stolen annually is somewhat higher than the most recent gun theft estimate (233,000) reported from the NCVS. Overall, however, the number of guns stolen appears to have remained relatively stable over time. In the late 1980s, the NCVS estimated that approximately 340,000 firearms were stolen each year. Using data from the NSPOF, combined with data from a state-level survey that estimated the number of guns stolen per theft incident in that state, Cook and Ludwig estimate that slightly fewer than five hundred thousand guns per year were stolen in the United States in the mid-1990s.

The NFS used an existing probability-based online panel (KnowledgePanel) to examine U.S.

gun ownership, whereas our 2004 survey and the NSPOF both relied on random digit dialing. It is possible that online panel surveys and random-digit dial (RDD) surveys elicit systematically different responses from survey participants, suggesting that comparisons over time (and across survey modes) should be undertaken with some caution. Even if it were possible (or desired) to conduct an RDD survey about gun ownership today, such a survey would be unlikely to be comparable to surveys from 1994 or 2004 due to increasingly poor response rates on telephone surveys (Link et al. 2008). Moreover, probability-based online samples have been found to reduce social desirability bias and yield more accurate results than telephone surveys (Chang and Krosnick 2009).

Although the NFS is thus likely to produce a good estimate of firearms in civilian hands, as well as to accurately characterize the flow of guns and other characteristics of gun ownership, some gun owners may nevertheless have chosen not to report their gun ownership on a survey, and some non-gun owners may have reported owning guns when in fact they do not. What evidence there is, however, suggests that gun owners appear to respond accurately with respect to their firearm ownership on surveys. Studies that have validated survey reports of gun ownership against administrative data have reported low levels of

15. Missing answers as to whether the most recently acquired gun was new (as opposed to used) were imputed, based on the assumption that the 3 percent of respondents with missing data with respect to whether their most recently acquired firearm was new or old, were missing at random. The estimate we arrive at using ATF data is higher (ninety-one million versus seventy million) if we do not restrict respondents to those who indicated in a stem question that they had acquired the last firearm currently in their possession within the past five years. The reason for this is that some of these respondents indicated that they had acquired a nonzero number of firearms in the past five years when asked directly how many firearms they had acquired regardless of whether they still had the firearm in their possession. Incorporating these respondents' answers into our estimate of the gun flow increased the estimate we arrived at using ATF data because the flow of all guns (both new and used) is derived by dividing the ATF enumeration of new guns by the percentage of new guns that our respondents reported were acquired in the past five years (and, ignoring the stem question restriction decreased the percentage of new guns from 68 percent to 62 percent).

16. If respondents were not required to indicate in the stem question that their most recently acquired firearm was acquired within the past five years, 69 percent of gun owners reported having undergone a background check with respect to their most recently acquired gun (and therefore the estimate of the number of firearms acquired over the past five years increases to ninety-one million). This number is likely to be an underestimate given that each NICS background check may result in the acquisition of more than one firearm (for additional details regarding background check data, see Miller, Hepburn, and Azrael 2017).

false negative reports (approximately 10 percent), and virtually no false positive reports (Kellermann et al. 1990; Rafferty et al. 1995). In the NFS, fewer than 1 percent of respondents refused to answer our stem question about household gun ownership, and none refused the subsequent question regarding whether they personally owned a gun. Nonetheless, it is likely that some groups of gun owners (such as those who possess firearms illegally, such as someone with a felony conviction), are not reflected in our estimates, and possible that nonresponse to some questions may affect the validity of our findings if those choosing not to answer a question differed systematically from those who did. Given that 2 percent or fewer of respondents refused to answer the vast majority of our questions about firearms, nonresponse bias among those in our survey is unlikely to have had a material influence on our findings.

CONCLUSION

As of 2015, we estimate approximately 265 million guns in the U.S. civilian gun stock, an increase of approximately seventy million guns since the mid-1990s. Over that time, the proportion of handguns in the gun stock—most often bought for self-protection—has grown (to more than 40 percent), as has the proportion of gun owners who own both handguns and long guns (to more than 75 percent). Although the proportion of U.S. adults who report owning guns has declined only modestly, from 25 percent in 1994 to 22 percent in 2015, fewer men own them (32 percent in 2015 versus 42 percent in 1994), slightly more women do (12 percent in 2015 versus 9 percent in 1994), and owners in general are more likely to have

more guns (the mean number increased from four to five). Despite the increase in the average number of guns, the median owner owns only two (28 percent own one and 31 percent own two, accounting for 14 percent of the total U.S. stock); the 8 percent of all owners who own ten or more account for 39 percent of the gun stock (and 14 percent of owners own half the U.S. stock).

With respect to firearm transfers, we estimate that approximately seventy million firearms changed hands within the past five years, a number broadly consistent with manufacturing data from the ATF, the large majority of which were purchased, more so in the past two years (86 percent) than for those acquired more remotely (79 percent two to five years ago; 61 percent more than five years ago). Across all three periods, the most commonly acquired firearm was a handgun.

Guns not only move into but also out of the hands of owners. Five percent of gun owners in our sample reported having disposed of a gun within the past five years, most often (35 percent) through a sale to family or friends. Another 2.4 percent report having had a gun stolen within that time, accounting for an estimated five hundred thousand guns per year.

The National Firearms Survey provides the first nationally representative data about the stock and flow of guns in the United States since 2004 (and the second such since 1994). These data have the potential to ground public health, public safety and public policy discussions about guns and gun transfers in what we assume is largely the legal firearms market, which is where firearms, even those that end up in the gray or black market, all start out.

APPENDIX

Table A1. Estimation of Gun Stock Using Gun Manufacturing Data

Year	Total Guns (Millions)	Δ	Adjusted Estimate (.99)	Year	Total Guns (Millions)	Δ	Adjusted Estimate (.99)
1899–1945	47			1980	168	6	140
1946	48	1	48	1981	173	5	144
1947	51	3	50	1982	178	5	147
1948	53	2	52	1983	182	4	150
1949	55	2	53	1984	186	4	152
1950	58	3	56	1985	191	5	156
1951	60	2	57	1986	194	3	157
1952	62	2	58	1987	198	4	160
1953	64	2	60	1988	203	5	163
1954	66	2	61	1989	209	6	167
1955	67	1	62	1990	213	4	170
1956	69	2	63	1991	217	4	172
1957	71	2	64	1992	223	6	176
1958	73	2	66	1993	231	8	182
1959	75	2	67	1994	238	7	188
1960	78	3	69	1995	243	5	191
1961	80	2	71	1996	247	4	193
1962	81	1	71	1997	252	5	196
1963	84	3	73	1998	256	4	198
1964	86	2	75	1999	261	5	201
1965	89	3	77	2000	265	4	203
1966	93	4	80	2001	270	5	206
1967	97	4	83	2002	274	4	208
1968	102	5	87	2003	279	5	211
1969	107	5	92	2004	284	5	214
1970	112	5	96	2005	289	5	217
1971	117	5	100	2006	295	6	220
1972	122	5	104	2007	301	6	224
1973	128	6	109	2008	308	7	229
1974	135	7	115	2009	316	8	235
1975	140	5	118	2010	325	9	241
1976	146	6	123	2011	334	9	248
1977	151	5	127	2012	347	13	258
1978	156	5	131	2013	363	16	272
1979	162	6	135				

Source: Authors’ compilation based on Newton and Zimring 1968, Kleck 1991, and ATF 2015.
Note: We apply a 1 percent depreciation (permanent removal from use) rate to each year’s adjusted stock. Pre-1969 figures do not appear to include import (and net out export) data.

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EXHIBIT 2

THE UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

RUPP, et al.,)
Plaintiffs,)
vs.) Case No.:
XAVIER BECERRA, in his) 8:17-cv-00746-JLS-JDE
official capacity as Attorney)
General of the State of)
California; et al.,)
Defendants.)
_____)

VIDEOTAPED DEPOSITION OF JOHN J. DONOHUE
San Francisco, California
Thursday, December 6, 2018
Volume 1

Reported by:
RACHEL FERRIER, CSR No. 6948
Job No. 3135713
PAGES 1 - 244

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23 VISUAL DISCOVERY

24

25

1	A	Okay.	10:15:29
2	Q	So --	10:15:35
3	MR. CHANG:	It's what the local rules require.	10:15:35
4	BY MR. BRADY:		10:15:44
5	Q	-- what were you being -- designated as an expert	10:15:46
6		in for the purposes of this case?	10:15:49
7	A	Well, I was asked to you provide expert testimony	10:15:50
8		on aspects of the assault weapon ban in California and	10:16:00
9		on issues relating to, you know, both the effectiveness	10:16:05
10		of the ban and the legality of the ban.	10:16:12
11	Q	And what expertise do you have to make those	10:16:17
12		opinions?	10:16:23
13	A	Just research in -- in the area relevant to	10:16:24
14		crime, and guns in particular, over an extended period	10:16:31
15		of time.	10:16:36
16	Q	Are you a criminologist?	10:16:36
17	A	Some people refer to me as a criminologist, but	10:16:38
18		I -- I think of myself more as a lawyer and economist	10:16:43
19		who focuses on crime and criminal justice issues.	10:16:51
20	Q	Do you have a degree in criminology?	10:16:55
21	A	No.	10:16:57
22	MR. BRADY:	I would like to mark as Exhibit 5.	10:17:05
23		(Exhibit 5 was marked for identification	10:17:23
24		by the Court Reporter.)	10:17:24
25	BY MR. BRADY:		10:17:24

1 category? 10:20:49

2 A Yeah, I mean, I -- I'm trying to think of how 10:20:50

3 surveys would be offered to opine on the causal impact 10:20:56

4 of law or policy, but if -- if they were, then my quick 10:21:04

5 thought is that they would probably be down in that -- 10:21:07

6 that category. 10:21:10

7 Q Okay. Can you turn to page 4 of your report 10:21:11

8 marked as Exhibit 4. 10:21:26

9 A Page 4 of my report, yes. Okay. 10:21:30

10 Q I'm sorry, I meant page 6. 10:21:34

11 A Okay. Page 6. 10:21:37

12 Q At the bottom, beginning under "Discussion," you 10:21:41

13 have a heading that says: Gun ownership is becoming 10:21:46

14 more concentrated in a declining portion of the 10:21:49

15 population; is that correct? 10:21:52

16 A Yes. 10:21:53

17 Q And in support of that, you cite the General 10:21:53

18 Social Science Survey; is that correct? 10:22:00

19 A Yes. 10:22:02

20 Q And you cite to the Pew Research Center Survey; 10:22:03

21 is that correct? 10:22:12

22 A Yes. 10:22:12

23 Q And it looks like you cite to some other papers 10:22:12

24 analyzing surveys; correct? 10:22:19

25 A Yes. 10:22:20

Page 12

1 purchase on what's happening with actual gun possession. 10:24:22

2 So while, you know, you would want to look at 10:24:27

3 everything, it probably didn't inform my opinion on the 10:24:30

4 conclusion that I reached here. 10:24:35

5 Q So, then, the surveys are the sole thing that you 10:24:37

6 made your opinion here on? 10:24:46

7 A Well, I mean, I -- I think the -- the surveys 10:24:49

8 gave us the sort of best estimates of percentages, but 10:24:53

9 one -- you know, one always is looking at everything 10:25:03

10 when you are researching in a certain area to get a 10:25:07

11 sense of whether this seems to be consistent or 10:25:12

12 explicable pattern, and so, you know, try to understand 10:25:15

13 what's happening with gun ownership and why it's 10:25:20

14 declining, and that pushes you to look at things like 10:25:23

15 hunting licenses, so it's not a survey, but that's 10:25:26

16 probably an important factor in why gun ownership is 10:25:28

17 declining, and then you can think about things like the 10:25:34

18 composition of the population, and more urban a 10:25:38

19 population would be, the lower the rates of gun 10:25:41

20 owner- -- gun ownership typically would be. 10:25:45

21 So -- so, you know, you are bringing in all of 10:25:47

22 the -- all of the available evidence and trying to come 10:25:49

23 to some considered judgment as to what overall gun 10:25:53

24 ownership looks like. 10:25:57

25 Q Did you evaluate that evidence that you just 10:25:58

1 citations. 10:33:04

2 Q So you don't think it's fair to say that your 10:33:05

3 characterization of the gun industry's purpose in 10:33:11

4 promoting the sale of so-called assault weapons is that 10:33:18

5 they were trying to increase gun sales versus simply 10:33:24

6 selling firearms that the -- the public wanted? 10:33:29

7 MR. CHANG: Objection; vague and complex. 10:33:32

8 THE WITNESS: I mean, you know, they are -- they 10:33:38

9 are in it to make money, and when crime goes down, 10:33:42

10 that's a bad thing for them because gun sales go down. 10:33:44

11 When hunting goes down, that's a bad thing for them, so 10:33:47

12 they got to find ways to try to turn that around, so 10:33:50

13 they were -- they were effective, and they lobbied in 10:33:54

14 Congress and state legislatures to get laws changed to 10:33:59

15 expand their market and aggressively marketed and -- you 10:34:03

16 know, just look at all the ads for assault weapons, and, 10:34:09

17 you know, I think they've -- they've done a good job in 10:34:16

18 promoting their -- their product. 10:34:18

19 BY MR. BRADY: 10:34:20

20 Q How did the urban to -- I'm sorry, the 10:34:36

21 rural-to-urban shift that you mentioned affect your 10:34:39

22 opinion on gun ownership becoming more concentrated? 10:34:42

23 A You know, again, it was trying to understand what 10:34:46

24 were the contours of, you know, the -- the longer trends 10:34:52

25 in gun ownership, and since the decline of hunting was 10:34:58

1 figure in 1980, let's say, that was higher than what the 11:00:31
2 General Social Survey has given us today, and the -- the 11:00:36
3 Behavioral Risk Factor survey is -- is endorsing the -- 11:00:43
4 the, you know, relatively low figure that the General 11:00:47
5 Social Survey offers us. 11:00:49

6 Q And is the National Behavioral Risk Factor survey 11:00:52
7 a reliable one, in your experience? 11:01:01

8 A Yeah, it's -- it's considered one of the -- 11:01:03
9 the -- the reliable surveys. 11:01:07

10 I mean, I think all of these surveys are worthy 11:01:08
11 of consideration, and then you look to see if a -- if a 11:01:15
12 consistent picture emerges. 11:01:21

13 Here, there is some discrepancy with the Gallup 11:01:23
14 survey being an outlier, but for a variety of reasons, 11:01:27
15 I -- I tend to accept the conclusion of the other 11:01:32
16 surveys; that -- that there really has been this drop. 11:01:39

17 Q Which surveys are those? 11:01:42

18 A Well, when I say -- when I say that there really 11:01:43
19 has been a drop, if the -- if the numbers are down into 11:01:48
20 the 30s and -- low 30s, then I think everybody would 11:01:52
21 agree that there has been a drop in the prevalence of -- 11:01:58
22 of gun ownership by household. 11:02:02

23 And if you look at that, every survey that has 11:02:06
24 data after 2000 is showing, you know, gun ownership by 11:02:10
25 household levels down in the low 30s, and the only one 11:02:18

1 that's not showing that is -- is the Gallup survey, so 11:02:24

2 that's the -- the outlier, in my view. 11:02:30

3 Q What about the Pew Research Center survey; you 11:02:32

4 say that it, too, finds a persistent decline in 11:02:42

5 household gun ownership. 11:02:45

6 Is that your opinion as well? 11:02:51

7 A Yeah, I mean, I think -- I think you're -- you're 11:02:53

8 right that the language is imprecise. I would say that 11:02:56

9 all of these surveys, other than Gallup, provide 11:03:06

10 evidence that is consistent with the long-term decline 11:03:12

11 in household gun ownership over the past several 11:03:17

12 decades. 11:03:21

13 Q And the Pew Research Center survey corroborates 11:03:21

14 that, in your opinion? 11:03:29

15 A Yeah, because they -- they back up -- you know, 11:03:30

16 it's a more recent survey, so it doesn't have the -- 11:03:37

17 the -- the longer tenure of the General Social Survey, 11:03:41

18 but they are backing up the results by saying, Our 11:03:45

19 surveys largely confirm the General Social Survey trend. 11:03:51

20 And -- and so, again, it's -- it's providing 11:03:56

21 further confirmation that one of the major survey 11:03:59

22 entities is -- is supporting this conclusion. 11:04:05

23 Q Okay. And you said that you had the most recent 11:04:12

24 data from GSS. 11:04:32

25 Is this the most recent data from the Pew 11:04:34

1 one of the one that I thought was the most reliable, 11:17:47
2 and -- and the overall conclusion that I reached when I 11:17:55
3 wrote my paper on this was that there had been this 11:18:00
4 decline and that the only outlier in this body of 11:18:07
5 evidence was the Gallup survey. 11:18:13

6 What you point out, which is a fair thing to 11:18:17
7 point out, is that now there's a -- another survey that 11:18:20
8 pro- -- provides a higher figure recently, but just a 11:18:29
9 few years ago, it had a much lower number, and -- and -- 11:18:32
10 and there's no chance that both of those numbers could 11:18:37
11 be correct because one is -- is much lower than the 11:18:41
12 other one. 11:18:45

13 So we don't know, on the basis of this, whether 11:18:45
14 this Pew number that you just reference is the one 11:18:49
15 that's wrong or the earlier one was too low, but they -- 11:18:54
16 they both can't be correct, and there's no reason to 11:18:59
17 necessarily trust this one over the earlier one, except 11:19:05
18 we do have the GSS, which is the single most reliable 11:19:13
19 survey, and that tells us the pattern is downward, so 11:19:17
20 probably suggests this number is upward bias, but we 11:19:23
21 will have to wait until the GSS latest survey comes out 11:19:27
22 before we can, you know, kind of draw a firm conclusion 11:19:30
23 on that. 11:19:33

24 Q And it's your testimony that you have never seen 11:19:34
25 this 2017 Pew Research Center survey in preparing your 11:19:35

1 Center survey from 2017 with the 42 percent -- 11:21:49

2 A You know -- 11:21:49

3 Q -- gun ownership number? 11:21:54

4 A -- I did not see the 42 percent number. I think 11:21:55

5 I have seen this -- this survey, but I was looking at it 11:22:03

6 for other purposes and hadn't noticed the 42 percent 11:22:07

7 number. I -- I obviously would have put it in, as I put 11:22:12

8 in the Gallup numbers in my survey, had -- had it been 11:22:16

9 there. 11:22:21

10 And, in a sense, it -- it doesn't change what GSS 11:22:26

11 found, which I -- I state as still the most reliable. 11:22:31

12 And it just makes me convinced, of course, that 11:22:36

13 something is wrong in Pew. We don't know whether it was 11:22:43

14 wrong, the last survey or in this survey, because one of 11:22:46

15 those Pew surveys is -- is clearly wrong. 11:22:51

16 Q So, then, are you taking back your opinion that 11:22:53

17 the Pew Research Center survey is reliable? 11:22:57

18 A You know, I -- I think all of these surveys are 11:23:02

19 worthy of consideration, but if you get, you know, a 11:23:06

20 real outlier, it could -- could just be bad luck. 11:23:13

21 I mean, if I take a random sample of Americans 11:23:17

22 and I happen to randomly draw, you know, a thousand NRA 11:23:22

23 members in a 1200-member survey, then you would get 11:23:27

24 wacky results. That doesn't mean the survey is, you 11:23:31

25 know, intentionally flawed, but random surveys can 11:23:40

1 the last decade? 11:36:09

2 A Well, as I said, Gallup was the outlier. They 11:36:11

3 were flat since, you know, about 2000, but down from 11:36:16

4 decades before that, so they -- they sort of convert -- 11:36:23

5 confirm the long-term trend, and, you know, the -- the 11:36:27

6 question is: Did Gallup understate the -- the long-term 11:36:34

7 decline, or, you know, is -- is there something that the 11:36:42

8 long-term decline stopped in 2000 and -- or in sort of a 11:36:50

9 steady state since then, or maybe even some upward tick 11:36:55

10 in the last couple of years, and that's a little 11:37:00

11 unclear. 11:37:02

12 Q And the most recent Gallup number of 43 percent 11:37:03

13 home gun ownership is almost identical to the most 11:37:20

14 recent Pew Research Center survey of 42 percent; is that 11:37:29

15 correct? 11:37:34

16 A It is. 11:37:34

17 Q And neither of those figures was included in your 11:37:35

18 report; is that correct? 11:37:41

19 A Yes; although, I did include the 45 percent 11:37:41

20 figure from Gallup in 2011, so, I mean, using your 11:37:50

21 suggestion, someone might argue -- I wouldn't advise 11:37:57

22 it -- that the trend is down in the Gallup numbers in 11:38:02

23 the last couple of years. 11:38:06

24 So, essentially, I know you would like to be able 11:38:09

25 to draw a conclusion of a trend based on one year, but 11:38:16

1 | that really can't be done. 11:38:24

2 Q To be clear, I'm not suggesting anything. I'm 11:38:25

3 asking you about the opinions you have written about in 11:38:28

4 | your report, and I'm asking how you came to the 11:38:31

5 | conclusions about home gun ownership being less -- 11:38:34

6 | having a downward trend. 11:38:42

7 And it sounds to me that you have relied on three 11:38:47

8 surveys that at least two of which, as you have just 11:38:52

9 | noted, go up and down by various percentage points over 11:38:59

10	the years and show no consistent trend, and so how is	11:39:03
----	---	----------

11 any -- and all three of them tend to disagree with each 11:39:08

12 other at certain points, so how can you draw any 11:39:13

13	opinions from these three surveys about home gun	11:39:18
----	--	----------

14	ownership?	11:39:22
----	------------	----------

15 A Well, the -- the data is sometimes in conflict, 11:39:26

16 and choices have to be made, so one has to, you know, 11:39:35

17	assess the overall validity and value of the different	11:39:39
----	--	----------

18	surveys.	11:39:46
----	----------	----------

19 You know, clearly, you just put in front of me a 11:39:48

20 document which does confirm there has been a long-term 11:39:51

21	downward trend in gun ownership.	11:39:55
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22	Q	How so?	11:39:57
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23	A	Because -- just look at your first page of the	11:39:58
----	---	--	----------

24 document you gave me. You fit a linear line through 11:40:01

25 | that, and it's long-term downward trend. 11:40:07

1 Q If it -- if it supports your opinion, why 11:41:28
2 wouldn't you include it in your report? 11:41:33
3 A I -- I included all the evidence in the -- in the 11:41:34
4 paper that I wrote, and I drew the conclusion that the 11:41:47
5 most reliable data is the General Social Survey. It 11:41:50
6 does show a long-term downward trend. That's supported, 11:41:54
7 not with the overwhelming evidence, but in broad contour 11:42:01
8 by the Gallup survey. 11:42:07
9 And, as I indicated, the only real question is: 11:42:09
10 Has the decline continued so that it's -- you know, the 11:42:14
11 ownership levels are down in the low 30s, or has the 11:42:21
12 decline leveled off so that the ownership levels are 11:42:26
13 around 40? And -- and that's what we don't really know. 11:42:30
14 If -- if -- if you don't accept that the General 11:42:37
15 Social Survey is the best evidence on this, then you 11:42:43
16 would have doubt about that. And if you think the 11:42:45
17 General Social Survey is the best, we have already -- 11:42:49
18 you know, you -- you highlighted the obvious error in 11:42:52
19 the Pew numbers -- in one of them. We are not sure 11:42:59
20 which. So it's one of the tricky elements of evaluating 11:43:02
21 survey data. 11:43:12
22 Q And why do you think the GSS is the best out of 11:43:14
23 these three, the most reliable? 11:43:17
24 A Oh, it's widely considered by social scientists 11:43:19
25 to be the gold standard of survey research. 11:43:23

1 Q Why is that? 11:43:26

2 A It's conducted by the National Opinion Research 11:43:27

3 Center at the University of Chicago. Has the most 11:43:31

4 professional staff. Has the most scientific focus on 11:43:34

5 the work. Has the -- the best protocols for survey 11:43:38

6 methodology. Has the, you know, consistently highest, 11:43:45

7 by wildly large levels, of response rate, which is a 11:43:50

8 huge issue. If you look at the response rates in 11:43:55

9 Gallup, these -- these response rates are incredibly low 11:43:59

10 and getting harder to -- to do all the time. These 11:44:03

11 people don't answer their phones anymore. 11:44:07

12 So, yeah, I mean, there's no question it's the 11:44:10

13 most reliable. We still have issues of: Is it perfect? 11:44:12

14 No, but it is clearly the best. 11:44:17

15 Q GSS conducts its surveys in person; is that 11:44:21

16 correct? 11:44:27

17 A It does, and it guarantees total anonymity to the 11:44:27

18 survey respondents. 11:44:34

19 Q In the case of firearm ownership, you don't think 11:44:36

20 that there's a possibility that people might feel 11:44:42

21 awkward answering a survey to a person face-to-face in 11:44:50

22 their home about whether they have a firearm there? 11:44:56

23 A Some people might. 11:44:59

24 Q So while GSS may be the gold standard, generally, 11:45:10

25 for surveys, could its practice of doing in-person 11:45:16

1 law or policy. I was just trying to say: What can we 11:48:54
2 say about the facts of gun ownership in the 11:48:58
3 United States. 11:49:03
4 Q The Donohue & Rabbani paper that you cite to in 11:49:03
5 paragraph 19 -- 11:49:47
6 A Yeah. 11:49:51
7 Q -- has that been published? 11:49:52
8 A No. 11:49:53
9 Q Has it been peer-reviewed? 11:49:53
10 A No. No. 11:49:55
11 Q Is it a common practice in your work to rely on 11:49:57
12 surveys for formulating opinions about social trends? 11:50:15
13 A Is it a common practice for people in my 11:50:27
14 business? Is that what you said? 11:50:32
15 Q Yes, in your field. 11:50:33
16 A Yeah, I mean, if -- if surveys are the only data 11:50:34
17 you have on a certain thing, then you -- you're sort of 11:50:41
18 forced to rely on that. And, you know, obviously if you 11:50:47
19 are interested in knowing what sort of gun prevalence 11:50:55
20 there is, as I said, you can look at proxies like 11:51:01
21 firearm suicide rates, gun accident rates, things like 11:51:07
22 sales of gun magazines, but why not look at the survey 11:51:12
23 data as well, especially if you have a gold standard 11:51:17
24 survey instrument like the GSS. 11:51:22
25 And with -- with one exception, everything other 11:51:28

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1	A	Okay.	12:00:17
2	Q	Page 9 of your report, paragraph 5 --	12:00:17
3	A	Yeah.	12:00:21
4	Q	I'm sorry, paragraph 25 --	12:00:22
5	A	Yeah.	12:00:24
6	Q	-- you state, quote: While the precise number of	12:00:24
7		American households that own assault weapons nationally	12:00:28
8		is uncertain, it is clear that most gun-owning	12:00:31
9		households do not possess these types of weapons.	12:00:36
10		On what do you base that statement?	12:00:39
11	A	Well, just because we are getting estimates of --	12:00:41
12		you know, let's -- let's say it's 30 percent of American	12:00:51
13		households, the -- you know, I've never seen any number	12:00:59
14		suggesting assault weapons could -- could even be half	12:01:07
15		of that, and -- and so, therefore, it's clear that most	12:01:16
16		gun-owning households do not possess them. Exactly how	12:01:23
17		many do is -- is a little less certain.	12:01:27
18	Q	Going to paragraph 16, you state: This minority	12:01:29
19		status of assault-weapon ownership by household reflects	12:01:39
20		the judgment of most Americans, that assault weapons are	12:01:45
21		not important to their self-defense.	12:01:46
22	A	Yeah.	12:01:48
23	MR. CHANG:	To -- to be clear for the record,	12:01:49
24		it's paragraph 26.	12:01:51
25	MR. BRADY:	Correct. Yeah.	12:01:51

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1 Q And there are several states that prohibit the 12:03:21
2 sale of such rifles; correct? 12:03:27
3 A Yeah, there -- there's -- there are limited 12:03:29
4 number, yeah. 12:03:35
5 Q Couldn't that impact the percentage of gun owners 12:03:35
6 who own such firearms? 12:03:40
7 A Yeah, in those states, but no -- no -- no state, 12:03:42
8 even the most, you know, avidly pro assault weapon, 12:03:46
9 deviates from this broad conclusion. 12:03:53
10 Q Well, the conclusion I'm focusing in on is not 12:03:57
11 whether it's a minority of gun owners. I'm asking how 12:04:00
12 you know that the reason it's a minority is because 12:04:05
13 those people have made the decision that those guns are 12:04:09
14 not important for their self-defense? 12:04:12
15 A Well, since most people don't have guns for 12:04:16
16 self-defense, we know that most people don't think guns 12:04:22
17 are necessary for their self-defense, because guns are 12:04:26
18 cheap. You don't have to buy an assault weapon to get a 12:04:30
19 gun. So since most people don't think guns are 12:04:35
20 important for their self-defense and most people who 12:04:38
21 want guns don't have assault weapons, I don't think I'm 12:04:43
22 out on a limb here saying that most people think that 12:04:47
23 assault weapons are not important to their self-defense. 12:04:53
24 Q Well, we have indicated price point could affect 12:04:55
25 that; right? 12:04:59

1 shooting, but he was saying, "I wish I could get an 12:19:11
2 AR-15." He didn't have enough money for it. So -- so 12:19:14
3 we know some people are -- are priced out. 12:19:17
4 But it's -- since almost no one really believes 12:19:19
5 that assault weapons are important for self-defense, 12:19:26
6 usually the people who are priced out are the people who 12:19:33
7 want to do a mass killing, which is one of the reasons 12:19:35
8 why we have assault weapons bans, because we are happy 12:19:37
9 when we price out the -- the mass killers, especially 12:19:41
10 the kid mass killers who are very price sensitive. 12:19:44
11 Q When you say no one believes that assault weapons 12:19:47
12 are important for self-defense, are you saying there is 12:19:51
13 not an individual who has that opinion; that they are 12:19:56
14 important? 12:19:59
15 A Yeah, and so you have to be careful. Obviously 12:19:59
16 if you are in the military, they can be important to 12:20:03
17 your -- both your self-defense and your offense. 12:20:07
18 But the -- the people I talk to who say that they 12:20:13
19 feel they need an assault weapon for self-defense are 12:20:17
20 not very persuasive to me. I can't tell whether they 12:20:22
21 believe that or whether they are just saying that for 12:20:26
22 whatever reason. 12:20:31
23 Q And that's what you are basing your opinion on, 12:20:31
24 that nobody thinks that assault weapons are important 12:20:33
25 for self-defense? 12:20:37

1 A Well, so few people would ever even assert that 12:20:38
2 they thought assault weapons are important for 12:20:42
3 self-defense; that the statement is fine as it is. The 12:20:44
4 few that do say it's important for self-defense, I can't 12:20:47
5 tell whether they -- they really believe that or they 12:20:51
6 are just saying that. 12:20:54

7 Q On what do you base your opinion that so few 12:20:55
8 people would have that opinion? 12:20:57

9 A Just, you know, you -- you work in my line of 12:20:58
10 work for a long time and you speak to all sorts of gun 12:21:05
11 people, and very, very few of them will say that assault 12:21:09
12 weapons are important to their self-defense. 12:21:17

13 Q Have you looked at any data on that? 12:21:19

14 A I haven't seen any data. I would be happy to 12:21:21
15 look at it, but I would be stunned if a significant 12:21:25
16 number of gun owners truthfully and knowledgeably 12:21:34
17 believed that assault weapons were important to their 12:21:40
18 self-defense. 12:21:43

19 Q We will be getting into this later, because it's 12:21:43
20 not in front of you, but you did review Plaintiffs' 12:21:47
21 expert William English's report in this matter, did you 12:21:51
22 not? 12:21:56

23 MR. CHANG: Objection; vague. 12:21:57

24 BY MR. BRADY: 12:22:02

25 Q Did you read Professor English's report? 12:22:02

1 because it would be really undermining of his authority 12:23:42
2 if he -- if he were. 12:23:47
3 Q And if he relied on a survey done by the National 12:23:49
4 Shooting Sports Foundation? 12:23:59
5 A I mean, I'd certainly need to know a lot about 12:23:59
6 it. My -- my initial assumption would be: Not going to 12:24:05
7 be a reliable source. 12:24:10
8 Q And why would that be? 12:24:12
9 A Just for all the reasons we have been talking 12:24:14
10 about. I mean, you were offering suggestions for why 12:24:16
11 the General Social Survey might not be fully accurate, 12:24:27
12 and these are some of the best survey scientists in the 12:24:31
13 country who really care about the truth. 12:24:35
14 What gun group have -- has ever shown a similar 12:24:40
15 concern about science or the truth? I'm not aware of 12:24:45
16 any. 12:24:48
17 Q Do the gun control groups show a concern for 12:24:48
18 truth? 12:24:54
19 A Sometimes they do and sometimes they don't, and 12:24:54
20 you have to be very cautious about, you know, what you 12:24:59
21 rely on. 12:25:03
22 Q How do you know whether they are being careful 12:25:03
23 about the truth or not? 12:25:06
24 A You know, you really need to look at whatever is 12:25:07
25 being offered by advocates fairly carefully and test it 12:25:16

1 Q And that is the NSSF's term for a rifle that 12:27:11
2 meets the definition of an assault weapon, generally; 12:27:18
3 right? 12:27:21
4 A Yes. 12:27:21
5 Q So when they talk about MSRs, they are 12:27:21
6 essentially talking about so-called rifles that meet the 12:27:27
7 definition of an assault weapon, such as an AR-15 or an 12:27:33
8 AKA platform rifle. 12:27:36
9 Would that be your understanding? 12:27:38
10 A Yes. 12:27:39
11 Q And so what is the No. 1 reason that people 12:27:39
12 acquire these firearms? 12:27:49
13 MR. CHANG: Objection; vague. 12:27:51
14 BY MR. BRADY: 12:27:52
15 Q Per -- according to this document? 12:27:52
16 A Well, do we see on this to bulk up a flagging 12:27:54
17 sense of masculinity? I don't see that on the list 12:28:02
18 here. 12:28:06
19 Have you seen any of the advertisements for 12:28:08
20 modern sporting rifles, "Get your Man Card reissued"? 12:28:12
21 That would probably be No. 1 if they put it on the list, 12:28:20
22 but we don't -- they didn't give you that choice, did 12:28:23
23 they? 12:28:25
24 Q So it's your opinion that if there was an option 12:28:25
25 on the survey of: I would like to feel more masculine, 12:28:33

1 obviously they want to say it's good for home defense. 12:30:16
2 You know, most real gun experts will tell you, "No. 12:30:21
3 This is not only not necessary for self-defense, but is 12:30:24
4 not an important factor for people who understand 12:30:29
5 guns" -- 12:30:34
6 Q Most gun experts would say that? On what do you 12:30:35
7 base that? 12:30:39
8 A Conversations with gun experts -- 12:30:39
9 Q How many? 12:30:44
10 A Hundreds. Hundreds. 12:30:47
11 Q Can you name one gun expert that said that an 12:30:50
12 AR-15 is not important for self-defense? 12:30:53
13 A Yeah, I can name plenty, but let me give you 12:30:56
14 someone of some prominence. 12:31:02
15 Dean Winslow, he is former colonel in the Army 12:31:06
16 and was nominated by James Mattis to be the assistant 12:31:15
17 secretary of defense for medical affairs, and I 12:31:23
18 reference him in my report, and he is very clear about 12:31:28
19 the absolute inappropriate nature of these weapons for 12:31:37
20 both home defense and for civilian use in an 12:31:46
21 unrestrained and unrestricted way. "So, yeah, shooting 12:31:50
22 is a blast, and I -- I enjoy shooting," he'll -- he'll 12:31:54
23 say, but the idea you need this for anything other than 12:31:59
24 having fun is -- is really quite a stretch. 12:32:03
25 Q And he's a self-defense expert? 12:32:06

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1 Exhibit 9. 12:38:16

2 A Yeah. 12:38:16

3 Q And the second-most important reason that people 12:38:16

4 who acquired these rifles gave to the NSSF is home 12:38:24

5 defense; is that correct? 12:38:30

6 A That's what it says on the survey. 12:38:31

7 Q And you just don't buy the survey; right? 12:38:37

8 A No. 12:38:40

9 Q But that is what the survey says, is that home 12:38:40

10 defense is the second-most important reason that 12:38:42

11 purchasers of these rifles gave for purchasing them; 12:38:45

12 right? 12:38:48

13 A Yeah, that's -- that's the conclusion. 12:38:48

14 Q Are you aware of any better data on the subject 12:38:51

15 than this? 12:38:54

16 A Well, one piece of data is look at the 12:38:54

17 advertisements for these weapons. Are they -- are 12:39:03

18 they -- how many times have you heard them referred to 12:39:08

19 as "protection weapons"? I don't think you hear that 12:39:10

20 very often. 12:39:15

21 Q Have you done analysis of the advertising for 12:39:16

22 these rifles? 12:39:21

23 A Yeah, I've -- I've looked at them. I've never 12:39:22

24 seen any reference to that, and I've seen lots of 12:39:24

25 references along the lines that I spoke of earlier, and 12:39:28

1 Q So it's speculation, but it's -- you just think 12:41:24
2 that the evidence supports that speculation; right? 12:41:27
3 A I wouldn't say it's speculation, and I will say 12:41:29
4 I've seen many ads talking about things -- that these 12:41:37
5 guns are supposed to be used in a sort of assaultive way 12:41:42
6 or a mock-military way or to make you feel better about 12:41:49
7 your, you know, insecure manhood, and I've never heard 12:41:52
8 these guns referred to as "protection rifles." I've 12:42:00
9 heard them referred to as "assault rifles," "tactical 12:42:04
10 weapons," "sporting rifles," so the way in which the 12:42:08
11 industry refers to them -- you know, sure, if they think 12:42:14
12 that they can get some sales up with this claim, you 12:42:20
13 know, they -- they would start doing that, but I -- I -- 12:42:27
14 I just don't believe that many people think that these 12:42:33
15 guns are designed for self-defense in the home. 12:42:41
16 Q If you saw a report from numerous self-defense 12:42:49
17 experts and former military saying that these rifles 12:42:59
18 are, indeed, good for home defense, would that influence 12:43:08
19 your opinion on that subject? 12:43:12
20 MR. CHANG: Objection; vague and ambiguous as to 12:43:13
21 "self-defense experts." 12:43:16
22 THE WITNESS: You know, I would look at them, 12:43:18
23 but, you know, are they going to be just the 12:43:20
24 General Flynn's selling out their country or -- 12:43:22
25 BY MR. BRADY: 12:43:25

1 together? 12:54:14

2 MR. CHANG: Objection; mischaracterizes the 12:54:15

3 witness's testimony. 12:54:20

4 THE WITNESS: Yeah, I did know, and I'm just sort 12:54:23

5 of blanking right now what the name of the entity was. 12:54:28

6 BY MR. BRADY: 12:54:33

7 Q Was it the Law Center to Prevent Gun Violence? 12:54:33

8 A No. 12:54:37

9 Q Was it the Violence Policy Center? 12:54:37

10 A No. No. No. It was an independent survey 12:54:43

11 entity. 12:54:49

12 Q So you can't recall what entity conducted the 12:54:51

13 survey; is that right? 12:54:55

14 A Yeah, as I'm sitting here, I'm -- I'm blanking on 12:55:05

15 the name, but it was -- it was -- you know -- 12:55:08

16 MR. CHANG: Would it help if you review the 12:55:09

17 article? 12:55:11

18 THE WITNESS: This article I don't think talks 12:55:11

19 about that; although, it might. Let's see. 12:55:13

20 Oh, yeah, so it said Morning -- Morning Consult 12:55:13

21 is the group. 12:55:31

22 BY MR. BRADY: 12:55:31

23 Q Where is that? I'm sorry. 12:55:32

24 A It's "How we made our matrix." 12:55:32

25 Q Morning Consult. 12:55:35

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1	A	Yeah.	12:55:37
2	Q	Conducted a survey of 1975 voters?	12:55:37
3	A	Yeah, so the -- the -- and it's a very long	12:55:42
4		survey, very, you know, involved, and, you know,	12:55:45
5		they're -- they're -- they work for entities like the	12:55:55
6		Times to come up with survey results.	12:55:58
7	Q	Are you familiar with their methods in conducting	12:56:01
8		this survey?	12:56:10
9	A	You know, I looked at them at the time, and, in	12:56:11
10		general, you know, they seemed as reliable as, you know,	12:56:21
11		Pew or Gallup in terms of the methodologies that they	12:56:26
12		employ, and I thought the fact that the -- the Times was	12:56:35
13		using them was, you know, further sign the Times usually	12:56:46
14		goes to pretty talented people to do that sort of work.	12:56:47
15	Q	So you would trust a poll more so if it was	12:56:53
16		conducted by or approved by the New York Times?	12:56:58
17	A	Yeah, I mean, you have to be cautious. I mean,	12:57:12
18		if it was a survey done to say, "Is the New York Times	12:57:15
19		the best paper?" I might be a little concerned.	12:57:19
20	Q	Sure.	12:57:22
21		On the issue of gun control.	12:57:23
22	A	But, yeah, on the issue of gun control, I think	12:57:24
23		they are -- they are going to be interested to find out	12:57:28
24		what the survey legitimately says for the questions they	12:57:31
25		are interested in.	12:57:41

1 aware. The -- the -- all the -- there were 63 questions 01:00:08
2 prior to this page that were not relevant to the 01:00:13
3 subject, and so in the -- for the purpose of not having 01:00:16
4 you flip through all the pages and find -- 01:00:21
5 A Yeah. 01:00:21
6 Q -- this question, I have limited it to the one 01:00:24
7 page. 01:00:28
8 A Yeah. 01:00:28
9 Q So do you see Question 65? 01:00:29
10 A Yes. 01:00:33
11 Q And it says: Do you favor or oppose a nationwide 01:00:33
12 ban on assault weapons? Correct? 01:00:36
13 A Yeah. 01:00:39
14 Q And what is the most recent number percentage in 01:00:39
15 favor of opposing -- in favor of a ban on assault 01:00:48
16 weapons? 01:00:56
17 A Well, the most recent number is the one that we 01:00:56
18 looked at in Exhibit 10. 01:01:01
19 Q Understood. I'm asking about this -- 01:01:03
20 A Yeah. 01:01:03
21 Q -- particular survey. 01:01:05
22 A Yeah, so -- so this -- this one -- you can see 01:01:07
23 all of them were very positive, and then it bumps down 01:01:10
24 for this one in 2015 to 44 percent. 01:01:16
25 But that -- that sort of makes my point; that you 01:01:24

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1 I didn't see it, so -- as I said, I didn't go back and 01:09:04
2 do any independent research on household ownership 01:09:07
3 question, and -- and that was because I had spent a lot 01:09:16
4 of time doing that 2017 report, and I don't think any 01:09:22
5 conclusion would vary from that -- you know, from 2017 01:09:27
6 to 2018, even if -- even if, you know -- literally 01:09:34
7 anything, it would just be one data point, and we would 01:09:40
8 have the problems that we were just seeing in the 01:09:44
9 New York Times one that you cited. It's clearly an 01:09:47
10 outlier and not one that you would rely on without 01:09:51
11 seeing, like, the next survey to figure out what's wrong 01:09:54
12 with this particular thing or -- or has suddenly the -- 01:10:00
13 the world shifted in some unusual way. 01:10:04

14 Q Can you refer to Exhibit 7. 01:10:07

15 A Exhibit 7, yes. 01:10:15

16 Q The one I just touched. Sorry about that. 01:10:16

17 Page 7. 01:10:18

18 A Yeah. 01:10:20

19 Q Now, this is the Gallup poll survey; correct? 01:10:21

20 A Yeah. 01:10:27

21 Q And the question in the middle of the page on 01:10:28

22 page 7 is: Are you for or against a law which would 01:10:33

23 make it illegal to manufacture, sell, or possess 01:10:40

24 semiautomatic guns known as "assault rifles"? 01:10:43

25 A Yeah. Yeah. Yeah. So I actually thought this 01:10:46

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1 was -- thi was a poorly worded question, so not -- not 01:10:53
2 relevant to our inquiry. 01:10:57
3 Q Why is that? 01:11:01
4 A Because I -- I suspect that -- well, I -- I -- my 01:11:02
5 fear was that a lot of people would look at this and say 01:11:08
6 we are defining assault weapons as semiautomatic guns, 01:11:13
7 and -- and people aren't in favor of banning all 01:11:19
8 semiautomatic guns. It's just the assault weapons. 01:11:24
9 So, you know, phrasing is -- is important in 01:11:29
10 these surveys, and I thought that this particular 01:11:34
11 phrasing was -- was very likely to give the wrong 01:11:37
12 answer. 01:11:46
13 And you raise an interesting question. Does this 01:11:46
14 suggest Gallup is sort of, you know, trying to put their 01:11:49
15 finger on the scale in the gun debate? I don't have any 01:11:52
16 reason for knowing this, but it's interesting that they 01:11:59
17 are the ones who are sort of out of line on the -- on 01:12:02
18 the ownership levels and now using a question that, 01:12:09
19 almost on its face, seems like it's not likely to give a 01:12:12
20 good result. 01:12:15
21 It would be interesting to speculate. I need to 01:12:17
22 find out, you know, is Gallup totally aboveboard on -- 01:12:21
23 on this, or is it just, you know, somebody goofed in 01:12:26
24 making this formulation. 01:12:31
25 Q Well, couldn't it be that the inclusion of the 01:12:33

1 word "semiautomatic" gets a more accurate feeling for 01:12:36
2 people's views on assault weapons because people, 01:12:45
3 without seeing that word, might believe that the word -- 01:12:49
4 the term "assault rifles" means "machine guns"; right? 01:12:53
5 MR. CHANG: Objection; calls for speculation. 01:12:56
6 THE WITNESS: Yeah, but we -- we went through a 01:12:59
7 ten-year period of assault weapon ban, so I think 01:13:01
8 people are -- I think people probably have the right 01:13:10
9 thing in mind if you just ask for: Should we go back to 01:13:12
10 banning assault weapons the way we did for ten years, is 01:13:16
11 the way -- would have been a better phrasing, I think. 01:13:20
12 BY MR. BRADY: 01:13:24
13 Q And you think that people with that question 01:13:24
14 would not have the confusion about whether we are 01:13:27
15 talking about semiautomatic or fully automatic rifles? 01:13:29
16 A I mean, you know, anything's always possible. 01:13:34
17 I'm just saying that it's not as though we are asking 01:13:39
18 about something that has never existed before. We 01:13:42
19 literally had a nationwide assault weapon ban for ten 01:13:45
20 years, so to that extent, people were -- were fully 01:13:48
21 informed and lived under the regime that you are asking 01:13:56
22 about, so -- 01:13:59
23 Q But that would only be a minority of gun owners, 01:14:00
24 according to your opinion -- right? -- that would even 01:14:03
25 care about knowing the definition; right? And here we 01:14:05

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1 others that I cited concluded, and this one is sort of 01:17:03
2 suggesting, you know, if you think we should be getting 01:17:09
3 rid of semiautomatic guns more broadly, then -- then, 01:17:14
4 you know, there seems not to be the same level of 01:17:20
5 support for that. 01:17:24

6 Q Have you seen any data or research that suggests 01:17:25
7 that the American public has a good understanding of 01:17:31
8 what the term "assault weapon" or "assault rifle" means? 01:17:34

9 A I mean, obviously it's challenging for the public 01:17:41
10 to know the -- the details of -- of these laws, but -- 01:17:47
11 but, you know, in broad terms, you would think that they 01:17:50
12 would have -- at least have an understanding of the 01:17:54
13 federal assault weapon ban and -- 01:17:56

14 Q Even if very few people, relatively speaking to 01:17:58
15 the population, owned such firearms, according to you in 01:18:03
16 your report? 01:18:07

17 Why would somebody learn the definition of 01:18:09
18 "assault weapon" if they have no desire to own one? 01:18:11

19 MR. CHANG: Objection; calls for speculation. 01:18:16

20 THE WITNESS: Yeah. Yeah. Right, and so we are 01:18:23
21 not wholly disagreeing that there can be confusion about 01:18:25
22 this. I'm just saying that, by asking the question like 01:18:31
23 this, I think it confused it in one way, and you are, 01:18:35
24 you know, saying, Well, maybe if they didn't ask it like 01:18:41
25 this, it's confusing it the other way. I 01:18:45

1 think that's -- I think that's a fair characterization. 01:18:48

2 BY MR. BRADY: 01:18:50

3 Q But Professor Kleck cites data showing this 01:18:50

4 confusion in his report. It is a January 2013 national 01:18:56

5 survey -- he cites it as Reason-Rupe, 2013 -- that found 01:19:02

6 the people surveyed -- when asked to describe an assault 01:19:11

7 weapon, 29 percent of the respondents stated that it was 01:19:17

8 an automatic weapon. 01:19:21

9 Do you have any reason to dispute that finding? 01:19:24

10 A Yeah, I mean, I can't really vouch for it without 01:19:27

11 looking at it, but I'm -- I'm sure some people, you 01:19:33

12 know, are -- are unclear what the definition of -- of 01:19:37

13 "assault rifles" are. 01:19:40

14 Q So you have never seen the Reason-Rupe study that 01:19:42

15 Professor Kleck cites in his report about the confusion 01:19:45

16 among survey takers about the term "assault weapon"? 01:19:49

17 A Yes, I have not seen that. 01:19:53

18 MR. BRADY: Okay. I think we are done. 01:19:56

19 THE VIDEOGRAPHER: We are going off the record, 01:19:57

20 and the time is 1:20. 01:20:07

21 (Lunch recess taken.) 01:20:08

22 ---o0o--- 02:21:23

23 02:21:23

24

25

1 out lots of people. 02:51:57

2 Q So your understanding is that, when you are 02:52:04

3 talking about "active shooter incidents" in your 02:52:06

4 discussion in paragraph 43 and, I believe, 44 means that 02:52:09

5 it's a mass shooter? 02:52:21

6 A Well, the idea is that that's -- that's the -- 02:52:26

7 the goal of the shooter. Sometimes they are stopped 02:52:32

8 more quickly, and so it has a slightly different 02:52:38

9 definition than some of the other numbers that are 02:52:45

10 quoted in -- in other parts of the report. 02:52:51

11 Q So "active shooter incidents" could include 02:52:52

12 incidents where nobody was actually shot? 02:52:57

13 A I don't know if there were any cases where nobody 02:53:00

14 was actually shot, but you would have to be trying to, 02:53:07

15 you know, un- -- unleash weaponry on -- on the public 02:53:12

16 in -- in some way to get included in there. 02:53:16

17 Because, essentially, what Obama was interested 02:53:20

18 in after Newton is: Is there any way to stop these 02:53:23

19 things? So they asked the FBI to look at these 02:53:28

20 episodes, and -- and the FBI concluded: Let's look at 02:53:31

21 all of the cases where somebody is trying to do what 02:53:36

22 Adam Lanza succeeded in doing, but we will look a little 02:53:42

23 bit more broadly because we also want to know: If 02:53:45

24 somebody tried to do what he did and was stopped, we 02:53:50

25 want to look at that case, as well as the successful 02:53:54

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1 that out of the 160 active shooter incidents in the FBI 03:08:44
2 report, you are only aware of one private citizen 03:08:50
3 intervening with a gun successfully in any of those 03:08:54
4 instances. 03:08:58
5 Is that still your understanding? 03:08:59
6 A Yes. 03:09:01
7 Q Is that limited to just the 160 active shooter 03:09:03
8 incidents in the FBI report? 03:09:07
9 A Yeah, they -- they looked at all of the active 03:09:09
10 shooter incidents over that 2000-to-2013, I think it 03:09:13
11 was, period. 03:09:19
12 Q So there couldn't be any other 03:09:19
13 good-guy-with-a-gun shootings during that time period 03:09:23
14 that are not captured here? 03:09:26
15 A I mean, it's possible that they -- they missed 03:09:28
16 something, but at least for the 160 active shooter cases 03:09:34
17 they looked at, there -- there was, essentially, no one 03:09:40
18 who -- who played a positive role unless they were 03:09:48
19 trained police or security or active-duty military. 03:09:52
20 Q Have you looked at anything other than the FBI 03:09:59
21 report to make that conclusion? 03:10:03
22 A Well, here, I was just -- I was just sort of 03:10:04
23 quoting what the FBI found in their study. You know, if 03:10:11
24 there's a case that they missed, I'm -- I'm happy to 03:10:16
25 look at that as well, obviously. 03:10:22

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1 Q Did you consider John Lott's data about citizens 03:10:24
2 intervening -- armed citizens intervening in criminal 03:10:34
3 shootings? 03:10:40

4 A I mean, I usually don't think I'm going to get 03:10:40
5 much help from John, and, you know, he -- he has badly 03:10:49
6 mischaracterized some -- some of these events at times, 03:10:56
7 so, you know, if -- if I am reading a paper of his, 03:11:05
8 I'll -- I'll certainly take into account what he says, 03:11:08
9 but I don't -- I don't generally think that John is 03:11:17
10 going to have better information than the FBI on these 03:11:20
11 questions. 03:11:26

12 Q So your answer is no, you do not look at 03:11:29
13 Professor Lott's report on civilians with firearms 03:11:32
14 intervening in shootings -- 03:11:40

15 A I mean -- 03:11:42

16 Q -- in making this opinion? 03:11:44

17 A I mean, are you referring to a particular paper? 03:11:45

18 Q Professor Lott has published some information 03:11:52
19 through his organization about citizens intervening with 03:12:00
20 firearms in a positive way. 03:12:06

21 A Mm-hmm. 03:12:06

22 Q I'm just wondering if you have seen that. 03:12:08

23 A I mean, I've seen, you know, it seems like an 03:12:10
24 endless amount of work by John, and, again, here, we are 03:12:17
25 talking about active shooter incidents, and so that is a 03:12:22

1 A Sorry, I went to paragraph 46. 03:26:20

2 Yes, I'm on -- 03:26:24

3 Q Paragraph 112? 03:26:25

4 A Got it. 03:26:28

5 Q It says: There's evidence that the federal 03:26:29

6 assault weapons ban was effective in limiting criminal 03:26:31

7 use of assault weapons; is that correct? 03:26:34

8 A Yes. 03:26:36

9 Q And that's your opinion? 03:26:36

10 A Yes, that is my opinion. 03:26:38

11 Q And what do you base that opinion on? 03:26:41

12 A Well, what I -- what I cite in my report here. 03:26:43

13 Q Okay. Well, the first thing you cite is the 03:26:50

14 Brady Center to Prevent Gun Violence. 03:26:53

15 Is that a normal source for researchers to 03:26:58

16 consider in evaluating gun laws? 03:27:05

17 A Is it a normal source? I mean, it's -- it does 03:27:09

18 provide evidence. 03:27:19

19 Q You are not concerned about the evidence being 03:27:19

20 biased? 03:27:21

21 A One -- one is always concerned about bias if -- 03:27:27

22 if, you know, it's -- it's one of the advocacy groups on 03:27:33

23 either side in this issue. 03:27:36

24 Q Do you know what sort of methodology the Brady 03:27:37

25 Center used in preparing this analysis? 03:27:41

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1 to identify if, on that broad level, you could see 03:29:20
2 changes in the trace data. 03:29:23
3 Q So would it be fair to say that in your hierarchy 03:29:25
4 of -- of determining the causal impact of law and 03:29:29
5 policies, the Brady Center's report would fall at No. 4 03:29:34
6 on your list? 03:29:39
7 If you could, keep that handy because -- 03:29:47
8 A Sure, sure, sure. 03:29:47
9 Q -- I might keep referring to that. 03:29:49
10 A Yeah. 03:29:51
11 Yeah, four or five. 03:29:52
12 Q So it's lower down on your preferred hierarchy of 03:29:53
13 good methodology; right? 03:29:56
14 A Yeah. I mean, in -- in general -- you know, if 03:29:58
15 you can do it at a higher level, that's great, but as we 03:30:04
16 saw, you know, I -- I did a two- or three-level study on 03:30:09
17 right-to-carry laws and -- and John Lott did a two- or 03:30:14
18 three-level study on right-to-carry laws, and, you know, 03:30:19
19 I spent a lot of time in my paper showing why I think 03:30:22
20 his turned out wrong, so it's not as though if you are 03:30:25
21 at the higher level you are home free. It's just that 03:30:29
22 you have a greater chance of ruling out confounding 03:30:33
23 factors if you are higher up in this hierarchy. 03:30:38
24 Q Understood. 03:30:41
25 So would you say that this study, the Brady 03:30:43

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1	A	Yeah.	03:34:49
2	Q	So is there any reason to believe that this is	03:34:50
3		not --	03:34:53
4		MR. CHANG: Objection --	03:34:55
5		BY MR. BRADY:	03:34:56
6	Q	-- a more recent version of the 2004 ATF trace	03:34:57
7		report that the Brady Center relied on in its report?	03:35:02
8		MR. CHANG: Objection; misstates the -- the	03:35:05
9		wording on the document.	03:35:10
10		THE WITNESS: Yeah, I mean, the reason why I was	03:35:15
11		uncertain here was that they -- they were looking at	03:35:17
12		overall trace data, and this is for California, and so,	03:35:21
13		you know, this -- they were looking at overall trace	03:35:28
14		data. This is for California for a later period, and	03:35:31
15		that's where I was just, you know, getting cautious	03:35:34
16		about saying it was looking at the same data.	03:35:39
17		MR. BRADY: Got it.	03:35:41
18	Q	Can you turn to page 2 of the document, please.	03:35:44
19	A	Sure.	03:35:48
20	Q	Can you read aloud subdivision 2 on that page?	03:35:48
21	A	Yeah.	03:36:00
22		[Reading]: Firearms selected for tracing are not	03:36:03
23		chosen for purposes of determining which types, makes,	03:36:06
24		or models of firearms are used for illicit purposes.	03:36:10
25		The firearms selected do not constitute a random sample	03:36:16

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1 and should not be considered representative of the 03:36:20
2 larger universe of all firearms used by criminals or any 03:36:23
3 subset that have universe. 03:36:29

4 Q That's fine. 03:36:31

5 So if that same disclaimer is in the 2004 version 03:36:32
6 of ATF trace data that the Brady Center relied on, would 03:36:46
7 that make you question their conclusions in that report 03:36:52
8 that rely on ATF trace data to determine the types of 03:36:59
9 firearms that are used for illegal purposes? 03:37:07

10 A Well, not necessarily. 03:37:08

11 Q Why not? 03:37:15

12 A You know, it gets back to something that we were 03:37:15
13 talking about earlier where we were looking at the 03:37:19
14 downward trend in household prevalence of guns in the 03:37:26
15 U.S., and, you know, the -- I think it was Kleck or 03:37:35
16 someone who -- and perhaps English who said, you know, 03:37:42
17 people don't want to report that they are -- that they 03:37:46
18 have a gun, but they have been reporting it for 40 years 03:37:50
19 if they had a gun, so you would need to document that 03:37:55
20 something changed in a way to make it less accurate 03:37:59
21 today than it was previously. 03:38:03

22 And the same applies here, so this is saying we 03:38:06
23 may not give you a perfect percentage for the illicit 03:38:10
24 firearms, but if we see a change when assault weapon ban 03:38:16
25 goes into effect and then when it's -- when it's 03:38:21

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1 operates over this whole period, we can essentially 03:40:17
2 ignore the fixed effect. It's telling us you're -- 03:40:19
3 you're not going to have a great estimate on the level 03:40:22
4 of illegal gun use, but take some confidence out of how 03:40:24
5 it moves, and if it moves that you have fewer assault 03:40:29
6 weapons when the ban goes into effect and more 03:40:32
7 afterwards, then that buttresses the conclusion that the 03:40:35
8 Brady Center reached in -- in this paper. 03:40:39

9 Q Do you know whether there's any fixed effect of 03:40:40
10 that nature in -- over the course of ATF trace data? 03:40:44

11 A That is my understanding. 03:40:49

12 Q That there is a fixed effect? 03:40:50

13 A Yeah. 03:40:51

14 Q Okay. Now, when you talk about the federal 03:40:52
15 assault weapon ban, what definition for "assault weapon" 03:41:18
16 are you using? 03:41:22

17 A So when I'm talking about the federal assault 03:41:25
18 weapon ban, I just mean the attributes of the 03:41:29
19 prohibition that was enacted by Congress in 1994. 03:41:37

20 Q And what are those? 03:41:41

21 A You know, the -- the entire constellation of, you 03:41:41
22 know, restrictions on certain weapons, ban on magazines 03:41:48
23 above ten, and so those are the two most important 03:41:54
24 elements of -- of the federal assault weapon ban. 03:42:00

25 Q So are you including your -- in your analysis 03:42:02

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1 that the assault weapons ban affected crime rates -- are 03:42:07
2 you including the magazine restriction -- the 03:42:13
3 large-capacity magazine restriction in that analysis? 03:42:18
4 A Yes. I'm -- I'm not able to separate out for my 03:42:21
5 analysis what the -- what the independent effect of the 03:42:30
6 magazine restriction is; although, you can -- you can 03:42:37
7 draw inferences on that question. 03:42:42
8 Q So it could be -- assuming you are right -- 03:42:46
9 A Mm-hmm. 03:42:46
10 Q -- your -- your analysis that the federal assault 03:42:55
11 weapons ban was effective in limiting criminal use of 03:42:58
12 assault weapons -- I'm sorry, let me strike that. 03:43:03
13 Assuming you are right that the federal ban 03:43:06
14 reduced crime, reduced deaths -- 03:43:11
15 A Mm-hmm. 03:43:11
16 Q -- and that is your opinion; right? 03:43:21
17 A That's what the -- the best evidence seems to 03:43:22
18 suggest. 03:43:25
19 Q Okay. Assuming that that is, indeed, the case -- 03:43:26
20 A Yeah. 03:43:26
21 Q -- it is possible that that is purely a result of 03:43:32
22 the restriction on magazine capacity versus the 03:43:35
23 particular firearm. 03:43:39
24 Is that fair to say? 03:43:40
25 A The reason why I don't say that is that it does 03:43:42

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1 seem that we get both fewer episodes of these mass 03:43:47
2 shootings and less deadly episodes, and so the 03:43:53
3 less-deadly part we are not sure whether that comes via 03:43:57
4 the -- the -- the magazine-component element of the 03:44:01
5 assault weapon ban or the gun-limiting element of the 03:44:07
6 assault weapon ban. 03:44:12

7 But the other part, which is the -- just the 03:44:15
8 reduction in the number of episodes, probably comes 03:44:18
9 purely through the -- the gun effect as opposed to the 03:44:23
10 gun-plus-high-capacity-magazine effect. 03:44:26

11 Q Why is that? 03:44:30

12 A I mean, it's -- what I just said is, I think, 03:44:30
13 plausible and likely, but not 100 percent certain for 03:44:37
14 the following reason: A lot of mass shooters seem to 03:44:43
15 like the idea of having very potent and scary-looking 03:44:48
16 weaponry in their hands, and the federal assault weapon 03:44:55
17 ban sort of undermined their aspirations to some degree. 03:45:00

18 If -- if that only comes by virtue of the gun 03:45:12
19 itself, then the assault weapon -- the -- the 03:45:14
20 restrictions on magazines doesn't play much of a role in 03:45:16
21 reducing the number of episodes, even if it does play a 03:45:21
22 role in reducing the lethality of those episodes. 03:45:26

23 But you could also make the argument: Well, 03:45:30
24 maybe it's the whole package; that it's not only that 03:45:32
25 you are going to have a scary-looking gun, but you are 03:45:38

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1 (Exhibit 14 was marked for 03:47:34
2 identification by the Court Reporter.) 03:47:34
3 BY MR. BRADY: 03:47:34
4 Q Would you consider the rifles on Exhibit 14 to be 03:47:36
5 of the scary-looking variety that would appeal to a mass 03:47:44
6 shooter? 03:47:49
7 A You are talking about the three guns -- 03:47:50
8 Q Yes, sir, the three rifles. There's only three 03:47:52
9 rifles on the page, yes. 03:47:55
10 A Yeah, I mean, to me, they all look -- they all 03:47:57
11 look scary, but as we were just saying, if, for example, 03:48:00
12 what they are -- what they are interested in doing is 03:48:05
13 killing the most number of people in the shortest amount 03:48:08
14 of time, you want to have the scary component plus the 03:48:11
15 full capacity to be able to kill as many as you can in 03:48:14
16 this limited amount of time, and that's what the -- 03:48:19
17 that's what the federal assault weapon ban was limiting. 03:48:23
18 Q Is it your understanding that these -- the three 03:48:32
19 riffles that appear on this page were prohibited from 03:48:35
20 being sold under the federal assault weapons ban? 03:48:39
21 A You know, I would have to take a fair amount of 03:48:42
22 time before I could draw any conclusion about whether 03:48:51
23 these particular guns were -- were not covered. 03:48:54
24 Q Why would you need time? 03:48:57
25 A You know, I -- I -- I mean, I guess if I can read 03:48:59

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1	A	Well, differences in appearance and	03:52:35
2		functionality.	03:52:43
3	Q	What's the difference in functionality?	03:52:43
4	MR. CHANG:	Objection; vague.	03:52:44
5	THE WITNESS:	I mean, for example, if you have a	03:52:46
6		collapsible stock, you may be able to get into an area	03:52:56
7		that with a fixed stock, you know, the gun will just be	03:53:00
8		too obvious as you are approaching.	03:53:04
9	BY MR. BRADY:		03:53:09
10	Q	Have you ever heard of an incident where somebody	03:53:09
11		smuggled in an assault weapon by collapsing the stock,	03:53:13
12		in your research on mass shootings?	03:53:20
13	A	You know, we certainly have examples of where	03:53:21
14		mass shooters disassembled weapons, and so, you know,	03:53:28
15		it's something that some of the mass shooters were --	03:53:37
16		were concerned about and were taking active steps to	03:53:41
17		conceal what they were doing as they entered a building.	03:53:47
18	Q	And is it -- is it your understanding that	03:53:53
19		California only prohibits collapsible stocks?	03:54:00
20	A	No, but, I mean, every feature that California	03:54:03
21		prohibits is designed to limit functionality of someone	03:54:08
22		who is bent upon mass destruction, and so each one of	03:54:15
23		those features -- it probably makes the gun more	03:54:21
24		desirable, both psychologically and -- and in terms of	03:54:29
25		effectiveness for the purposes of a mass shooter.	03:54:32

1 evidence, and I tried to rehearse some of that evidence. 04:05:12

2 Q Okay. So your opinion is that there's evidence 04:05:16

3 that the federal assault weapons ban was effective in 04:05:20

4 limiting criminal use of assault weapons, but you could 04:05:26

5 be wrong; that -- that the evidence is not 04:05:28

6 necessarily -- that the evidence is not unequivocal; 04:05:34

7 right? 04:05:37

8 A Right. 04:05:37

9 Remember, the -- the -- the evidence is most 04:05:40

10 potent that we did get this drop in the massacres during 04:05:45

11 the period of the assault weapon ban -- federal assault 04:05:56

12 weapon ban -- 04:05:59

13 Q What are you relying on for that? 04:05:59

14 A Just my report. 04:06:01

15 Q Your report? 04:06:02

16 A Yeah. 04:06:02

17 Q And -- but what does your report cite to for -- 04:06:03

18 did you run your own regressions and -- 04:06:07

19 A Yeah -- 04:06:12

20 Q -- do your -- 04:06:12

21 A -- no, I mean, I just looked at the data on these 04:06:12

22 mass shootings, and you do see two things happening. 04:06:17

23 You see this pretty dramatic drop in both the 04:06:24

24 number and the lethality of mass shootings during the 04:06:28

25 period of the assault weapon ban and then a pretty sharp 04:06:33

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1 A It -- whenever you are doing this work, it's a 04:08:14
2 complicated task of identifying the causal impact. 04:08:23
3 And -- and if I only had the drop in -- in -- in 04:08:28
4 massacres during the ten years of the federal assault 04:08:37
5 weapon ban, I would say it's evidence, but it's really 04:08:39
6 not that strong because all crime was going down over 04:08:43
7 that period. But the fact that all crime was going 04:08:46
8 down -- all crime continued to trend down after the 04:08:48
9 federal assault weapon ban lapsed, but massacres rose 04:08:52
10 sharply. That's suggestive of something else is going 04:08:56
11 on here. And I'm happy to entertain what might be that 04:09:02
12 other factor, but I have never heard anyone offer a 04:09:09
13 plausible explanation for why we do see this elevation 04:09:14
14 of mass shootings that corresponds to both the end of 04:09:21
15 the federal assault weapon ban and the escalation of the 04:09:25
16 purchase of these -- these assault weapons. 04:09:29

17 Q I haven't heard you explain how there could be 04:09:32
18 such a dramatic identifiable change from a law that 04:09:40
19 merely restricted whether you can move the stock or have 04:09:48
20 a flash suppresser on a rifle. 04:09:54

21 How can that account for -- how could requiring 04:09:59
22 that a rifle -- it can have all -- be identical as to 04:10:01
23 the assault weapon -- a rifle before the assault weapon 04:10:08
24 ban, it just has to fix the stock and remove the flash 04:10:11
25 suppressor, and that minute change can be isolated as 04:10:16

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1 being the cause of a reduction in crime? 04:10:24

2 A Well, you know, the federal assault weapon ban 04:10:31

3 did more than that, and all of my commentary was based 04:10:33

4 on what the federal assault weapon ban did. 04:10:36

5 Q No, that's what the federal assault weapon ban 04:10:38

6 did with respect to rifles. 04:10:41

7 What else did it do with respect to the rifle? 04:10:42

8 A Well, I'm just saying that the analysis that I 04:10:44

9 went through on the causal impact of the assault weapon 04:10:51

10 ban was based on the overall prohibitions of the federal 04:10:58

11 assault weapon ban. 04:11:07

12 Q Which includes the magazines; correct? 04:11:07

13 A It does. 04:11:09

14 Q Okay. So that is my question: How -- how are 04:11:10

15 you able to attribute any change that you claim there is 04:11:16

16 in crime to the changes of the rifle to the assault 04:11:24

17 weapon versus the magazine? 04:11:28

18 A Yeah, I can't -- I can't separate out the 04:11:31

19 individual effects. 04:11:36

20 Q So the effect that you contend you see could be 04:11:36

21 exclusively a result of the restriction on the magazine 04:11:40

22 capacity; correct? 04:11:44

23 A Yeah, based on -- on the analysis that -- that I 04:11:45

24 was -- was doing for the federal assault weapon ban, 04:11:53

25 it -- it could be the -- the mechanism is driven largely 04:11:56

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1 A Yeah, the -- the -- the particular statement 04:19:23
2 there really refers to the next page, as we are looking 04:19:31
3 at, you know, what happens over the periods prior to, 04:19:36
4 during, and then after the assault -- federal assault 04:19:43
5 weapon ban was in place. 04:19:47
6 Q Okay. And who put this table together? 04:19:49
7 A This was done by a researcher named Louis 04:19:51
8 Klarevas. 04:19:59
9 Q Are you familiar with his work? 04:19:59
10 A I am. 04:20:01
11 Q What of his work are you familiar with? How many 04:20:01
12 papers has he written? 04:20:08
13 A Yeah, I -- I don't know the total number of 04:20:10
14 papers. He has a book called Rampage Nation, and -- and 04:20:15
15 that was the -- the work that he used to generate this 04:20:19
16 sort of analysis. 04:20:29
17 Q Are you familiar with any of his other work 04:20:30
18 besides that book? 04:20:32
19 A You know, I've seen other things that he's 04:20:33
20 written, but I -- I haven't done a, you know, sort of 04:20:38
21 comprehensive evaluation of -- of his work across the 04:20:43
22 board. 04:20:47
23 Q Do you know what his credentials are? 04:20:47
24 A You know, I think he's -- he's a researcher at 04:20:52
25 University of Massachusetts, but I'm not -- not 04:20:57

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1 Q So would -- would this be a time series -- 04:22:55

2 A Yeah. 04:22:55

3 Q -- analysis? 04:23:00

4 A Yeah. 04:23:00

5 Q Okay. So it would be No. 4 on your hierarchy of 04:23:01

6 proper methodology for the impacts of law and policies? 04:23:08

7 A Yes. 04:23:11

8 Q Okay. And can't time series analyses simply 04:23:12

9 reflect a spurious correlation and not causation? 04:23:25

10 A Yeah. Yeah. Although, everything can -- can 04:23:29

11 reflect spurious causation, even panel data, and so on 04:23:34

12 so forth. 04:23:39

13 But what -- what's important about this is -- it 04:23:39

14 is time series, but it's more than time series because 04:23:44

15 there's also this sort of natural experiment dimension 04:23:46

16 to this -- and that bumps it up to Category 2 -- because 04:23:51

17 it's not as though I'm looking at this in 2003 or 2004 04:23:54

18 and I'm saying, oh, look, mass shootings were high prior 04:24:00

19 to adoption of the federal assault weapon ban and now 04:24:04

20 they are lower. If that's all you had, you would still 04:24:12

21 notice it and -- and document it, but that's sort of a 04:24:16

22 weak basis for concluding causation. 04:24:25

23 But then when you bring in the next component, 04:24:26

24 now it is sort of a natural experiment because you had 04:24:29

25 it -- or -- or you didn't have any restrictions on 04:24:31

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1 just wanted to see if -- if this pattern is, in fact, 04:29:11
2 there in the data that's publicly available, and -- and 04:29:19
3 it was. 04:29:24

4 Q And is that data cited in your report anywhere? 04:29:24

5 A You know, I'm sure it is somewhere, but -- but, 04:29:27
6 in any event, it's data from the Gun Violence Archive 04:29:41
7 and Mother Jones data set, so those are all data which 04:29:46
8 allow one to draw conclusions of the type that Klarevas 04:29:50
9 was doing here. 04:29:56

10 Q Is Mother Jones a source that's often relied on 04:29:59
11 by researchers for unbiased data? 04:30:03

12 A Well, I don't think Mother Jones is relied on 04:30:09
13 for, you know, neutral discussion of issues. They 04:30:14
14 have -- they have their ax to grind. 04:30:24

15 But in terms of the data set that they put 04:30:28
16 together, it is something that's been checked against 04:30:29
17 other data sets and -- and lines up very well with these 04:30:33
18 other data sets, and so a fair number of researchers do 04:30:37
19 use that data, as well as some of the other data sets. 04:30:43
20 Stanford, for example, put together their own, you know, 04:30:46
21 mass shooting data set, and it corresponds very tightly 04:30:51
22 with the Mother Jones data. 04:30:55

23 Q Okay. Just as I asked you about whether the 04:30:56
24 effect that you claim to see in the data from the 04:31:04
25 federal assault weapon ban -- 04:31:09

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1 adjustable stock, without the flash suppresser, but with 04:34:28
2 the magazine -- 04:34:31
3 A Mm-hmm. 04:34:31
4 Q -- with the pistol grip were still being sold, 04:34:32
5 the rifles being sold, why would you attribute the 04:34:35
6 increase in violence and crime to -- following the 04:34:43
7 ban -- 04:34:56
8 A Mm-hmm. 04:34:56
9 Q -- to the rifle? If they were available the 04:34:56
10 whole time -- right? Your premise -- correct me if I'm 04:35:00
11 wrong -- 04:35:04
12 A Yeah. 04:35:04
13 Q -- let me -- let me clarify, because I know this 04:35:05
14 is -- that was a long question. 04:35:06
15 A Yeah. 04:35:07
16 Q Your premise seems to be that -- and correct me 04:35:07
17 if I'm wrong -- 04:35:11
18 A Mm-hmm. 04:35:11
19 Q -- the crime and violence rates reduced during 04:35:12
20 the federal assault weapon ban because psycho killers 04:35:16
21 said, Oh, I don't want to go get this AR-15 -- or AR-15s 04:35:21
22 were less -- less available; right? Is that fair to -- 04:35:26
23 I'm characterizing your statement -- or your opinion 04:35:32
24 correctly? 04:35:35
25 A Yeah, that these particular guns were less 04:35:35

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1 available. 04:35:40

2 Q So if there were more AR-15 platform rifles 04:35:40

3 during that period, wouldn't that influence whether you 04:35:44

4 could attribute it to the rifle versus the magazine? 04:35:49

5 Wouldn't that impact your analysis about attributing it 04:35:53

6 to the rifle? 04:35:56

7 A Yeah, I mean, it goes to the question of: What 04:35:56

8 is it that makes the banned guns more desirable for mass 04:36:03

9 killers? And -- and if -- if those features are 04:36:13

10 accurately capturing that, then you're -- you're, 04:36:17

11 presumably, going to be limiting the desirability of 04:36:22

12 that -- that weaponry to the people that you don't want 04:36:28

13 to have those guns. 04:36:31

14 But, I mean, if -- if your point is that, you 04:36:34

15 know, the people who want AR-15s can have them anyway -- 04:36:42

16 so there's really no difference -- then I don't know 04:36:48

17 what this litigation is about; because if they can get 04:36:51

18 the guns that they want, why are they complaining about 04:36:54

19 restrictions on these guns. 04:36:56

20 Q Well, that's a separate question. I wasn't 04:36:58

21 asking that at all or making that -- 04:37:00

22 A But that's the central point of your -- of your 04:37:02

23 claim -- 04:37:04

24 Q It isn't. It isn't. So I think maybe there's 04:37:05

25 some confusion, so let me clarify. 04:37:06

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1 In making your opinions on the impacts of the 04:37:09
2 federal assault weapon ban, are you assuming that less 04:37:14
3 AR-15s were coming into the public arena? 04:37:20
4 A I'm -- I'm just assuming that less of the 04:37:27
5 prohibited guns were coming into the public arena. 04:37:33
6 Q And referring to Exhibit 12, these are rifles 04:37:37
7 that shoot the identical ammunition at the same speed. 04:37:43
8 You hold it the exact same way. Pull the trigger the 04:37:49
9 exact same way. Has a pistol grip. All that's 04:37:52
10 different is the adjustable stock -- it can't have an 04:37:57
11 adjustable stock and it cannot have a flash suppressor. 04:38:00
12 A Yeah, and so -- 04:38:04
13 Q So the -- the absence of an adjustable stock and 04:38:06
14 a flash suppresser caused a noticeable difference in the 04:38:12
15 level of crime. 04:38:20
16 Is that your opinion? 04:38:21
17 MR. CHANG: Just for the clarity of the record, 04:38:22
18 we are talking about Exhibit 14, not 12. 04:38:24
19 MR. BRADY: Yes. Thank you. Thank you. 04:38:27
20 MR. CHANG: Should probably keep those in front 04:38:34
21 of you. 04:38:36
22 THE WITNESS: Yeah, no, I -- I am not drawing any 04:38:39
23 conclusion on overall crime. I'm -- I'm just limiting 04:38:41
24 it to, you know, these sort of public mass shooting 04:38:44
25 events, and -- and that does seem to be a different 04:38:47

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1 calculus for some of these mass shooters, but I would 04:38:58
2 also note that the California law is -- is more 04:39:01
3 restrictive than the federal law, and -- and, therefore, 04:39:06
4 you know, these weapons are falling within the purview 04:39:11
5 of California prohibitions. 04:39:15
6 BY MR. BRADY: 04:39:17
7 Q Go back to your paragraph 112. You say: There 04:39:18
8 is evidence that the federal assault weapons ban was 04:39:20
9 effective in limiting criminal use of assault weapons. 04:39:23
10 So my question is: If more of these rifles were 04:39:28
11 available during that time period, then how would just 04:39:32
12 changing the stock -- fixing the stock and taking off a 04:39:39
13 flash suppresser affect the criminal use of one? Not 04:39:42
14 mass shootings. I'm talking about criminal use here. 04:39:48
15 A Yeah, no, I understand your point. I'm -- I'm 04:39:51
16 just saying that, to the extent that the prohibited 04:39:53
17 features and the prohibited guns were appealing to mass 04:39:58
18 shooters, that would be consistent with this decline in 04:40:04
19 incidents, and, you know, other aspects of the federal 04:40:12
20 assault weapon ban would then also go to the deaths. 04:40:18
21 But if the features were -- were not of 04:40:23
22 particular interest or appeal to the mass killers, then 04:40:30
23 it would not have an impact. 04:40:35
24 Q What is your basis for concluding that mass 04:40:37
25 shootings have been increasing since 2014? 04:40:41

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1 correct, before Professor English's report? 04:45:58

2 A Well, you know, there -- there's -- there's 04:46:02

3 certainly discussions and references in the literature, 04:46:06

4 you know, going back to Koper and before, discussing, 04:46:11

5 you know, sales of various types of weaponry. 04:46:17

6 Q Do you know whether they are limiting their 04:46:22

7 discussion to assault weapons meeting the federal 04:46:24

8 definition, or if they are talking about some other 04:46:28

9 definition? 04:46:30

10 A Well, you know, the -- the reports are -- are 04:46:30

11 varied. Some -- some of them would be talking about one 04:46:38

12 of those, and some would be talking about, you know, the 04:46:41

13 broader category. 04:46:45

14 Q And, again, tracking sales, assuming that mass 04:46:45

15 shootings track an increase -- track the sales of 04:47:02

16 assault weapons, that could be a spurious correlation; 04:47:06

17 correct? 04:47:10

18 A You know, every -- every -- every statistical 04:47:10

19 study is -- is subject to that concern: Are we picking 04:47:21

20 up the true causal effect, or is it a -- you know, just 04:47:28

21 a correlation that doesn't represent causation? 04:47:31

22 Q Okay. Turn to page 25, still on paragraph 57, 04:47:45

23 you quote Josh Sugarman, the executive director of the 04:47:47

24 Violence Policy Center, for the proposition that the end 04:47:51

25 of the assault weapons ban allowed for the customization 04:47:55

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1 and modification of these weapons to make them look even 04:47:58
2 more militaristic, even more grand in the eyes of their 04:48:01
3 owners. 04:48:05

4 Why would you quote Josh Sugarman in support of 04:48:08
5 your premise? Do you believe him to be an unbiased 04:48:11
6 character? 04:48:20

7 A Well, I -- I -- I probably should have quoted, 04:48:22
8 you know, some gun manufacturer's statement to the same 04:48:28
9 effect. 04:48:33

10 Q I mean, you cite the Violence Policy Center in 04:48:33
11 several instances in this paper; is that not true? 04:48:39

12 A Yeah, I cite them a few times. 04:48:41

13 Q And you don't find it concerning to rely on an 04:48:48
14 advocacy group for data? 04:48:54

15 A Well, I wasn't -- I wasn't relying on them for 04:48:57
16 data. 04:49:00

17 I think the point that I quoted there is true. 04:49:00
18 This is somebody who has a -- you know, has focused on 04:49:06
19 this issue. 04:49:12

20 But I -- I take the point. I -- I -- I probably 04:49:15
21 should bring in a, you know, gun lobbyist or -- or gun 04:49:19
22 seller to point out, you know, we have been working 04:49:25
23 carefully to make our guns look more militaristic and 04:49:31
24 threatening, and this will promote gun sales. And -- 04:49:37
25 and you can find those if you dig. 04:49:41

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1 on the mental health issues, whether the researchers are 04:53:52
2 correct in their conclusions or not based on your own 04:53:59
3 personal knowledge; right? 04:54:02

4 A I mean, the -- there -- there is a sort of 04:54:02
5 consistent body of evidence, I think, that these 04:54:12
6 traumatic mass shootings impose psychological burdens on 04:54:16
7 individuals, and we are getting a lot more information 04:54:23
8 about how even, you know, serving in the military is 04:54:26
9 predisposing people to post-traumatic distress and 04:54:31
10 things of this nature. 04:54:37

11 So I tried to find the -- the best studies on 04:54:39
12 this, and it's -- it's sort of consistent with what I 04:54:42
13 think is true and what -- what -- what the studies seem 04:54:46
14 to show. But I -- I don't, you know, have the capacity 04:54:51
15 to weigh in what the mechanisms are for that. I'm -- 04:54:56
16 I'm just trying to use the existing research in that 04:55:08
17 area to clarify what the costs of mass shootings are 04:55:11
18 more broadly. 04:55:18

19 Q Got it. 04:55:19

20 Okay. In paragraph 62 of your report, you say 04:55:20
21 that the United States certainly has a higher rate of 04:55:27
22 public mass shootings than other advanced industrialized 04:55:31
23 nations. 04:55:34

24 Is that your opinion? Page -- 04:55:36

25 A Yes, yes, yes. Yes. 04:55:36

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1 Q So your -- your opinion is that the United States 04:55:43
2 certainly has a higher rate of public mass shootings 04:55:47
3 than does -- than do other advanced industrialized 04:55:49
4 nations; correct? 04:55:53

5 A Yes. 04:55:53

6 Q And what is your basis for that? 04:55:54

7 A You know, again, there -- there is research on 04:55:55
8 this question, and it's -- it's trying to do for, you 04:56:01
9 know, other advanced industrialized nations what we were 04:56:16
10 just doing before when looking at the U.S. alone and 04:56:19
11 also do what I've done comparing Australia versus the 04:56:24
12 U.S. and what I've done comparing, you know, California 04:56:28
13 to Florida, for example. And in looking at all of those 04:56:33
14 comparisons, this -- this conclusion seems to emerge 04:56:40
15 fairly clearly from the studies that I've -- I've 04:56:48
16 examined. 04:56:54

17 Q And what studies are those? 04:56:54

18 A Well, some of them are -- are things that I've 04:56:55
19 done, but depending on which of those you are talking 04:57:01
20 about, you know, there's been a lot of work on 04:57:05
21 Australia, so numerous studies on Australia. I cite, 04:57:09
22 you know, the Lankford study and -- 04:57:16

23 Q What's the Lankford study? Where do you cite 04:57:20
24 that to -- or where do you cite that at? 04:57:23

25 A Where does it come in. I'm wondering if I cite 04:57:25

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1 done, which is cull from the public record all of the 05:01:35
2 mass shootings available to you, and then, from -- from 05:01:42
3 that, draw these broad conclusions about where they are 05:01:47
4 more prevalent. 05:01:50

5 Q So do you know where he got his data from for 05:01:51
6 these -- making these -- these counts? 05:02:00

7 A You know, he was using public -- public data. He 05:02:03
8 was using press reports, so things that were available 05:02:14
9 to researchers, in the same way that, you know, Mother 05:02:21
10 Jones and the Gun Violence Archive are -- are trying to 05:02:29
11 amalgamate this -- this data. 05:02:38

12 Q Did you ever see his data? 05:02:38

13 A No. 05:02:40

14 Q So do you know whether it's good data or bad 05:02:40
15 data? 05:02:45

16 A I mean, I didn't do an independent assessment of 05:02:45
17 his data. I did my own analysis of -- of Australia, so 05:02:52
18 it's -- it's pretty clear what happened in Australia 05:02:59
19 and, actually, serves some of the -- I mean generates 05:03:02
20 some of the same conclusions that we saw earlier. But I 05:03:08
21 didn't do the comparisons that, you know, would be fully 05:03:11
22 necessary to draw the broad conclusions that he's 05:03:17
23 drawing here. 05:03:20

24 Q So it says, in the first sentence, that the data 05:03:21
25 for this study were drawn first from the New York City 05:03:26

1 restrict quantitative analysis to cases that took place 05:05:12
2 within the U.S. because the NYPD limited its Internet 05:05:15
3 searches to English-language sites, creating a strong 05:05:21
4 sampling bias against international incidents. 05:05:25

5 Q What do you understand the term "strong sampling 05:05:28
6 bias against international incidents" to mean? 05:05:33

7 A Well, it's -- it's what Lankford says in his 05:05:36
8 study; that this -- this New York Police Department 05:05:44
9 Active Shooter Report is probably going to capture a 05:05:50
10 higher percentage of the mass shooting events in the 05:05:57
11 U.S. as opposed to, you know, the -- the 05:06:01
12 non-English-speaking countries. 05:06:08

13 So if you were going to do a comparison, you 05:06:11
14 would feel more comfortable comparing U.S., Canada, 05:06:13
15 United Kingdom, Australia than, you know, let's say, a 05:06:17
16 country like India, for example -- well, India has a lot 05:06:25
17 of English-speaking, but -- but some of these countries 05:06:30
18 would have much less full reporting from -- from 05:06:33
19 English-language sources, and, therefore, you are going 05:06:40
20 to understate if you are just using this data set. 05:06:43

21 Q So the NYPD report is acknowledging that the 05:06:46
22 methods that were used for gathering that data did not 05:06:51
23 allow them to make meaningful comparisons between the 05:06:56
24 United States and non-English-speaking nations with 05:07:00
25 respect to mass shootings; is that correct? 05:07:05

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1 Q Professor Donohue, do you have any special 05:24:34
2 personal knowledge about military firearms? 05:24:37
3 A You know, limited knowledge of military firearms 05:24:40
4 personally, but by reading, you know, broader knowledge. 05:24:50
5 Q But anything you read you would have to be 05:24:54
6 accepting what the person wrote as true; you wouldn't be 05:24:59
7 able to individually verify -- independently verify with 05:25:03
8 your personal knowledge whether their assessment was 05:25:08
9 correct or not. 05:25:11
10 Is that fair to say? 05:25:12
11 A Yeah, I mean, anything that -- anything that I 05:25:13
12 wrote here, I -- I assume I verified in some way, but I 05:25:21
13 wasn't verifying it by my practice on -- on the field, 05:25:28
14 if -- if that's what you mean. 05:25:30
15 Q Correct. 05:25:31
16 I'm asking: Do you have any personal 05:25:32
17 knowledge -- any special personal knowledge about 05:25:37
18 military arms that would help you determine whether the 05:25:39
19 information you were reading and citing to is correct or 05:25:42
20 not? 05:25:45
21 A No. I relied on others for those confirmations. 05:25:45
22 Q Got it. 05:25:52
23 Do you have any special knowledge about 05:25:53
24 ballistics? 05:25:59
25 A You know, you -- you learn about that if you are 05:26:02

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1 working in the area of guns, but I'm -- I'm not a 05:26:08
2 ballistics expert. 05:26:11
3 Q So you have never conducted a ballistics test? 05:26:12
4 A No. 05:26:15
5 Q Have you read ballistics reports? 05:26:15
6 A You know, in -- in the course of doing this work, 05:26:19
7 I'll see ballistics discussions, but it -- it certainly 05:26:22
8 hasn't been a major focus of my research. 05:26:28
9 Q And wound ballistics, do you have any background 05:26:32
10 in any medical background? 05:26:37
11 A I do not have any medical background in -- in 05:26:40
12 that, but, again, I'm citing people who I know and I've 05:26:44
13 spoken to on that. 05:26:50
14 Q But you -- again, you, with your knowledge, 05:26:50
15 cannot verify that the substance of what they say is 05:26:54
16 correct or not. 05:27:00
17 Is that fair to say? 05:27:00
18 A Well, again, if -- if you look at, for example, 05:27:01
19 just even the latest 60 minutes displays on the 05:27:09
20 difference between, you know, the ballistic consequences 05:27:13
21 of a bullet from a 9-millimeter pistol versus from an 05:27:18
22 AR-15, you can -- you can, I think, conclude that the -- 05:27:26
23 the military or medical evidence that -- that we are 05:27:35
24 discussing has a lot of experimental support, but I 05:27:38
25 didn't do the studies myself. 05:27:46

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1 adjustable seat so I can move myself closer or further 05:37:01
2 away from the steering wheel -- wheel as needed and I 05:37:04
3 object to that restriction, would that mean that I want 05:37:08
4 it to be more lethal or that I want the car to fit me 05:37:13
5 better? 05:37:16

6 A Yeah, the -- the -- the analogy is not -- not 05:37:23
7 quite right, though, because the moving around of the -- 05:37:30
8 the seat is really not going to have any impact on, you 05:37:36
9 know, the way the car is driven, but the -- the 05:37:43
10 restrictions on assault weapons are designed to impose 05:37:47
11 some limitations on the way the gun is used. 05:37:51

12 Q Okay. So how did the features go into your 05:37:54
13 report in the Sandy Hook case -- how did the features on 05:37:57
14 the rifle assist Adam Lanza? How -- how -- would -- 05:38:00
15 would -- is it your view that had the rifle not had the 05:38:05
16 features that it had, he would not have been able to 05:38:09
17 inflict the casualties that he did? 05:38:11

18 A Well, certainly that's true, and the question is: 05:38:17
19 Which features are we talking about? 05:38:28

20 Q So how did a flash suppresser assist the Sandy 05:38:32
21 Hook shooter? 05:38:37

22 A I mean, the flash suppressors help people who are 05:38:37
23 trying to rain down as many bullets as fast as they 05:38:52
24 can -- 05:38:56

25 Q How so? 05:38:56

1 know? 05:45:15

2 A Yeah, I mean, that's what the -- the interview 05:45:15

3 with the seller at the retail outfit where he bought the 05:45:20

4 gun said. 05:45:25

5 Q Got it. 05:45:25

6 So now you are saying, after that: Searching for 05:45:26

7 the deadliest assault weapon is exactly what one would 05:45:28

8 do if one wanted to simply kill as many people as 05:45:31

9 possible in the shortest amount of time. 05:45:34

10 That's what you say; right? 05:45:36

11 A Yeah. 05:45:37

12 Q Did Hasan use an assault weapon? 05:45:37

13 A Well, he certainly used a weapon that was 05:45:40

14 prohibited by the federal assault weapon ban. 05:45:45

15 Q Are -- is it your understanding that Hasan used a 05:45:51

16 rifle? 05:45:56

17 A No, but the ban on -- the federal assault weapon 05:45:56

18 ban was broader than simple rifle. 05:46:00

19 Q So the handgun that he used was prohibited under 05:46:05

20 the federal assault weapon ban? 05:46:08

21 MR. CHANG: Objection; assumes facts -- fact not 05:46:10

22 in evidence. 05:46:12

23 BY MR. BRADY: 05:46:12

24 Q Is that your understanding, is that the handgun 05:46:12

25 he used was prohibited under the federal assault weapon 05:46:15

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1 that people know the law, but you are right. In some 05:52:08
2 cases, people just aren't aware of what the law is. 05:52:15
3 Q Especially when nobody sends them anything in the 05:52:19
4 mail saying you got to do this, like your car 05:52:23
5 registration or something? If you just had to guess 05:52:27
6 that you had to go register your car because they 05:52:29
7 changed the rule, you think -- how many people you think 05:52:31
8 would know to comply to go register their car? 05:52:33
9 MR. CHANG: Objection; calls for speculation. 05:52:36
10 MR. BRADY: Okay. Withdrawn. 05:52:38
11 Q And how many years has there been an assault 05:52:46
12 weapon ban in California of some kind, do you know? 05:52:48
13 A A long time. 05:52:51
14 Q So could the presence of an assault weapon ban 05:52:53
15 dissuade people who have otherwise acquired those guns 05:52:57
16 from acquiring them? 05:53:01
17 A Well, I hope so. That's what the ban is for; 05:53:02
18 right? 05:53:07
19 Q Precisely. 05:53:07
20 So would people -- couldn't there have been a 05:53:09
21 significant amount of people who removed their rifles 05:53:15
22 from the state prior to the law taking effect and having 05:53:18
23 to register them? 05:53:22
24 MR. CHANG: Objection; calls for speculation. 05:53:23
25 THE WITNESS: Yeah, I mean, this has been a 05:53:25

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1 banned weapon for some time, but, sure, people -- people 05:53:33
2 could take them out of the state if -- if they didn't 05:53:37
3 want to sell them or otherwise dispose of them. 05:53:41
4 BY MR. BRADY: 05:53:44
5 Q But isn't that the point, that there's been a ban 05:53:44
6 in California, and so to use California -- or let me 05:53:46
7 ask: Are you trying to use California to show national 05:53:51
8 rates of assault weapon ownership, or are you just 05:53:54
9 simply saying they are rare in California? 05:53:57
10 A Oh, yeah, I -- I -- I was trying to say that, for 05:53:59
11 purposes of this litigation, it is a relatively small 05:54:06
12 set of people that are, you know, in -- in possession of 05:54:11
13 these weapons. 05:54:17
14 Q In California? 05:54:17
15 A In California. 05:54:18
16 Q You weren't trying to make any comments about 05:54:19
17 national rates? 05:54:21
18 A No, not in -- not in that discussion. 05:54:23
19 Q Okay. Even with that pointed out, so if all 05:54:24
20 somebody had to do to not have to register their rifle 05:54:31
21 under the new law was to remove the barrel, which I can 05:54:35
22 tell you takes about four seconds, and leave it in two 05:54:40
23 pieces, do you think that it's possible that a 05:54:45
24 significant number of people simply did that? 05:54:49
25 A So -- 05:54:53

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1 MR. CHANG: Objection; calls for speculation. 05:54:53

2 THE WITNESS: So -- so render the gun -- 05:54:55

3 MR. BRADY: Inoperable. 05:54:55

4 THE WITNESS: -- inoperable. 05:54:55

5 MR. BRADY: Temporarily. Pop two pins in in five 05:55:00

6 seconds. 05:55:02

7 THE WITNESS: Yeah, I mean, it's -- it's unclear 05:55:11

8 exactly who would do that in the sense that, you know, 05:55:13

9 people -- people want to play with these guns, and so if 05:55:21

10 it's inoperable, they really don't want to keep them, 05:55:23

11 unless you are a criminal, and then maybe you -- you 05:55:26

12 want to keep it, but then -- then why take the -- the 05:55:30

13 barrel off. 05:55:37

14 BY MR. BRADY: 05:55:37

15 Q Were you aware that at the time that the most 05:55:38

16 recent assault weapon registration ended, that the DOJ 05:55:42

17 still had over 52,000 assault weapon registration 05:55:47

18 applications pending? 05:55:50

19 A I was not aware of this. 05:55:51

20 Q Okay. Did you discuss -- without divulging any, 05:55:55

21 you know, work product, did you consult with the DOJ 05:55:58

22 Bureau of -- Bureau of Firearms in any way to determine 05:56:02

23 the 175,000 number? 05:56:06

24 MR. CHANG: I'm not sure exactly what you are 05:56:12

25 asking. 05:56:14

1 BY MR. BRADY: 05:56:14

2 Q He -- he -- you indicate that there's 175,000 05:56:15

3 assault rifles that were registered over -- over the 05:56:17

4 period of California's history. 05:56:21

5 I'm just asking: Did you consult with the DOJ 05:56:23

6 Bureau of Firearms in figuring out these figures? 05:56:28

7 MR. CHANG: I will provide that that's a number 05:56:31

8 that I provided to Professor Donohue. 05:56:33

9 MR. BRADY: Okay. 05:56:36

10 Q So other than just being provided this number, 05:56:36

11 you didn't get a chance to discuss how these numbers 05:56:40

12 could be impacted in the ways I just proposed could be 05:56:43

13 possible? 05:56:46

14 A Well, I -- I mean, obviously whenever you are 05:56:46

15 talking about registration, there are some standard 05:56:53

16 moves that people make to either avoid registration or 05:57:00

17 because they fail to register. So I didn't need to 05:57:09

18 discuss that with anyone. 05:57:13

19 Q What about people believing that their guns were 05:57:20

20 registered because they bought them from a licensed gun 05:57:22

21 dealer who made them fill out a federal 4473 form and a 05:57:25

22 California DROS form before they acquired the firearm; 05:57:29

23 could somebody reasonably believe that filling out all 05:57:32

24 that government paperwork was, indeed, registration? 05:57:35

25 MR. CHANG: Objection; calls for speculation. 05:57:38

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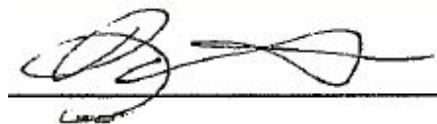
I, the undersigned, a Certified Shorthand Reporter of the State of California, do hereby certify:

That the foregoing proceedings were taken before me at the time and place herein set forth; that any witnesses in the foregoing proceedings, prior to testifying, were placed under oath; that a verbatim record of the proceedings was made by me using machine shorthand which was thereafter transcribed under my direction; further, that the foregoing is an accurate transcription thereof.

I further certify that I am neither financially interested in the action nor a relative or employee of any attorney or any of the parties.

IN WITNESS WHEREOF, I have this date subscribed my name.

Dated: December 24, 2018

A handwritten signature in black ink, appearing to read 'Rachel Ferrier', is written over a horizontal line.

RACHEL FERRIER

CSR No. 6948

CERTIFICATE OF SERVICE
IN THE UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
SOUTHERN DIVISION

Case Name: *Rupp, et al. v. Becerra*
Case No.: 8:17-cv-00746-JLS-JDE

IT IS HEREBY CERTIFIED THAT:

I, the undersigned, am a citizen of the United States and am at least eighteen years of age. My business address is 180 East Ocean Boulevard, Suite 200, Long Beach, California 90802.

I am not a party to the above-entitled action. I have caused service of:

**DECLARATION OF SEAN A. BRADY IN SUPPORT OF PLAINTIFFS'
MOTION TO EXCLUDE TESTIMONY OF DEFENDANT'S EXPERT
WITNESS JOHN J. DONOHUE UNDER FEDERAL RULE OF EVIDENCE
702**

on the following party by electronically filing the foregoing with the Clerk of the District Court using its ECF System, which electronically notifies them.

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I declare under penalty of perjury that the foregoing is true and correct.

Executed May 28, 2019.

/s/ Laura Palmerin
Laura Palmerin