Nos. 23-1793, 23-1825, 23-1826, 23-1827, 23-1828

UNITED STATES COURT OF APPEALS
FOR THE SEVENTH CIRCUIT

JAVIER HERRERA,

Plaintiff-Appellant,

v.

KWAME RAOUL, in his official capacity as Illinois Attorney General, BRENDEN F. KELLY, in his official capacity as Illinois State Police Director, COOK COUNTY, TONI PRECKWINKLE, in her official capacity as Cook County Board of Commissioners President, KIMBERLY FOXX, in her official capacity as Cook County State's Attorney, THOMAS DART, in his official capacity as Cook County Sheriff, CITY OF CHICAGO, and ERIC CARTER, in his official capacity as Superintendent of Police for the Chicago Police Department,

Defendants-Appellees.

APPEAL FROM THE U.S. DISTRICT COURT FOR THE NORTHERN DISTRICT OF ILLINOIS, EASTERN DIVISION, NO. 1:23-CV-00532
THE HONORABLE LINDSAY C. JENKINS

SUPPLEMENTAL APPENDIX

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UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JAVIER HERRERA, *Plaintiff*, v. KWAME RAOUL, in his official capacity as Attorney General of the State of Illinois, BRENDAN F. KELLY, in his official capacity as Director of the Illinois State Police, COOK COUNTY, a body politic and corporate, TONI PRECKWINKLE, in her official capacity County Board of Commissioners President, KIMBERLY M. FOXX, in her official capacity as Cook County State's Attorney, THOMAS J. DART, in his official capacity as Sheriff of Cook County, CITY OF CHICAGO, a body politic and corporate, DAVID O'NEAL BROWN, in his official capacity as Superintendent of Police for the Chicago Police Department, *Defendants.*	Case No. 1:23-cv-00532 Hon. Mary M. Rowland

DECLARATION OF JAVIER HERRERA

I, Javier Herrera, declare as follows:

1. I am over the age of 18, of sound mind, and otherwise competent to sign this declaration.

2. I am a United States citizen born and raised in the Chicago area. I currently live within Chicago's city limits. I am an emergency medicine doctor at a Chicago area public hospital. I teach tactical medicine at a public university, which entails providing emergency medical care during high-risk law enforcement operations.

3. I am a law-abiding gun owner with a valid firearm owner's identification card and concealed-carry license.

4. I own and use firearms and magazines for various purposes—including self-defense, training for work, hunting, and sport shooting.

5. I own a Glock 45, a common handgun that comes standard with a 17-round magazine. State and local law preclude me from purchasing, keeping, or using that standard magazine. Because of that, I cannot use my Glock 45 with standard components in my home. Based on my experience, using Glock handguns with non-standard magazines causes them to malfunction. But for state and local bans, I would purchase, keep, and use the standard 17-round magazine for my Glock 45 to make it function as designed, including for self-defense in my home. In my experience, not being able to use the standard magazine has various disadvantages, including for self-defense, such as the potential to impede the firearm's safety, reliability, and warranty.

6. I also own two AR-15 rifles, common semiautomatic rifles that come standard with a 30-round magazine. State and local law preclude me from keeping that rifle and its standard magazine in my home or using it for self-defense. State and local law also preclude me from purchasing components to replace, improve, or modify my AR-15, preclude me from purchasing standard magazines for that rifle, and preclude me from purchasing a new rifle. But for state and local bans, I would purchase new components, standard magazines, and a new rifle. Before Illinois passed its statewide rifle ban, I had planned to purchase other AR components, magazines, and another AR-15 rifle this year to accommodate my multiple uses for that style of firearm.

7. I must keep my AR-15 rifles, components, and standard magazines at a location north of Cook County. In regular Chicago traffic, it would take me more than one hour to drive from my home to that location to retrieve my AR-15 and more than one hour to drive back to my home.

8. In 2018, I was recruited to serve as a medic on a Chicagoland SWAT team. The team helps with high-risk search and arrest warrants, where weapons are known or suspected to be at the location, hostage situations, and active shooter situations. I am the medic, there to provide medical care to the operators on my team, any injured perpetrators, or injured bystanders. I am ordinarily stationed inside the SWAT team's command vehicle until called upon to render aid; medics are sometimes called upon to render aid in the so-called "hot zone" during these missions. Operators on my

team carry AR-15 rifles when we are deployed for missions. For my safety and everyone else's safety, it is important to me to cross-train to ensure that I am confident and proficient with the AR-15 rifle that the operators on my team carry. For example, that cross-training ensures that I could immediately secure, unload, and make safe an operator's AR-15 if an operator were to be injured. It ensures that an operator could quickly hand me their AR-15 if they needed to use a breaching tool or other specialized weapon, which has happened on past missions. If I didn't have the confidence or proficiency to safely and securely handle the AR-15, these tasks would fall to another operator, reducing the number of available operators in a high-risk, high-stress, fast-paced environment. Cross-training to maintain my proficiency with an AR-15 ensures that, whatever might happen on these high-risk missions, I am not a liability to my team. This training is essential to my safety and to building trust with my teammates.

9. In 2021, I attended SWAT school so that I could be more familiar with SWAT team fundamentals and learn the team's tactical maneuvers, both for my safety when we are deployed and the safety of the operators on my team and others whom I'm there to help. SWAT school entails shooting drills. I participated in those shooting drills—again to familiarize myself with my fellow team members' tactical maneuvers in the field and to maintain my firearm proficiency and familiarity. A weapon was not provided to me for those shooting drills; I used my own AR-15 and my own Glock 45 as a sidearm.

10. I participate in monthly training as part of the SWAT team. Two or three days every month, we train at locations south of my Chicago home. Monthly training includes shooting drills. Similar to SWAT school, I have participated in those shooting drills in the past with my own AR-15. It is important to me to participate in those shooting drills to familiarize myself with the team's operations on missions and to maintain the confidence and proficiency to safely and securely handle the AR-15 for my safety, my team's safety, and bystander's safety during missions.

11. Because I cannot keep my AR-15 rifles at my home, I cannot use it for self-defense in my home. I would keep an AR-15 in my home for self-defense to defend against a violent intruder at my home. In my experience, an AR-15 is easier to safely and accurately use under stress as compared

to a handgun. Unlike a handgun, an AR-15 allows me to place my non-firing hand farther toward the rifle's muzzle. Also unlike a handgun, an AR-15 has a stock that allows me to stabilize the rifle against my body. These features give me more control over the rifle, reducing the risk of injury to myself or a bystander in a high-stress situation. I know first-hand the stress of an active shooter situation. During my residency, I was at the hospital and rendered aid after a shooter killed the attending physician on duty and two others.

12. Because I cannot keep my AR-15 rifles at my home, it is also a practical impossibility for me to participate in my SWAT team's monthly shooting drills with my AR-15—drills I would otherwise participate in to maintain proficiency and confidence when handing that rifle. To attend training with my AR-15, it would require more than four hours of driving to and from locations to retrieve and return my AR-15, and then return home. It would take me more than an hour to drive to retrieve my weapon from its secure location outside of Cook County. From that location, it would then take me well over an hour and sometimes more than two hours to drive to the training locations. After training, it would take me well over an hour and sometimes two hours to return my AR-15 to the location outside of Cook County. It would then take me another hour or more to return to my home in Chicago. Because of the demands of my job as an emergency medicine doctor and my teaching commitments, I do not have hours to spend driving to retrieve and return my AR-15. As a result, I have been unable to participate in shooting drills with my AR-15 with the SWAT team. But for the ban prohibiting me from keeping my AR-15 in my home, I would be able to participate in shooting drills with my AR-15 with the SWAT team. My participation in those shooting drills is important for my own safety on missions and the safety of others.

13. I also use my AR-15 rifles for recreational purposes, including hunting and sport shooting. I visit indoor and outdoor ranges for target shooting. I use my AR-15 rifles to hunt small game in Indiana. But state and local laws burden my ability to enjoy these pursuits, including because I must keep my AR-15 rifles far from home.

14. For me to continue possessing my AR-15 rifles—albeit not in my home due to Cook County and City of Chicago ordinances—I understand I must register with the Illinois State Police.

These registration requirements are intrusive, and I do not wish to register the make, model, caliber, and serial number of my rifles, as the registration requirement demands, including because I fear that information could be later used to confiscate my rifle if the State, County, or City were to enact further legislation to confiscate firearms. I also fear that registration leaves me vulnerable to information breaches, where third parties could get access to my information.

15. I will attend the SWAT team's next scheduled training on February 27, 2023.

16. Pursuant to 28 U.S.C. §1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on January 27, 2023.

Javier Herrera

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JAVIER HERRERA, *Plaintiff*, v. KWAME RAOUL, in his official capacity as Attorney General of the State of Illinois, BRENDAN F. KELLY, in his official capacity as Director of the Illinois State Police, COOK COUNTY, a body politic and corporate, TONI PRECKWINKLE, in her official capacity County Board of Commissioners President, KIMBERLY M. FOXX, in her official capacity as Cook County State's Attorney, THOMAS J. DART, in his official capacity as Sheriff of Cook County, CITY OF CHICAGO, a body politic and corporate, DAVID O'NEAL BROWN, in his official capacity as Superintendent of Police for the Chicago Police Department, *Defendants.*	Case No. 1:23-cv-00532 Hon. Lindsay C. Jenkins **EXHIBIT 3** **HERRERA SUPPLEMENTAL DECLARATION**

SUPPLEMENTAL DECLARATION OF JAVIER HERRERA

I, Javier Herrera, declare as follows:

1. I am over the age of 18, of sound mind, and otherwise competent to sign this declaration.

2. I have served as a medic on a Chicagoland SWAT team for roughly 5 years. I've also spent thousands of hours in Chicago-area emergency rooms as a doctor of emergency medicine. During SWAT team missions and in those emergency rooms, I have seen first-hand the danger of *any* weapon in the hands of someone who intends to harm others. These real-life experiences have taught me the importance of being able to defend myself and defend others against bad actors, expected or unexpected.

3. My ability to defend myself and others depends on my ability to train and maintain proficiency with particular weapons that I use for my personal self-defense and also those weapons that may be used around me during SWAT missions. That training includes regular training with my SWAT team, which occurs two or three days per month and ordinarily entails weapons handling and shooting drills. The firearm used at that training is the AR-15, which is the firearm SWAT officers carry on our missions into some of the Chicago area's most dangerous neighborhoods, including for hostage situations and active-shooter situations.

4. The next training dates for my SWAT team are March 27 and 28, and then April 23, 24, and 25, 2023. I will attend at least one of the March training days and some of the April training days. But exactly which days I will attend will depend on my work schedule at the hospital.

5. There will be weapons handling training and live-fire shooting drills during those training days. I can't feasibly bring my AR-15 to the training and participate in the weapons handling training or shooting drills with my other team members because I cannot keep that firearm and its standard magazines in my home. As I explained in my previous declaration, retrieving and returning the firearm and its standard magazines would entail hours of driving, which I cannot do because of my emergency room shifts and my academic responsibilities.

6. For my own safety and the safety of others, I want to bring my AR-15 to training with the SWAT team so that I can participate in the weapons handling training and shooting drills. The SWAT team has encouraged my participation in that training. They sent me to SWAT school in 2021. And regularly participating in training with my own AR-15 ensures that I am proficient with the firearm that fellow team members use on missions. My proficiency makes the entire team safer and more comfortable in the high-risk environments of SWAT team missions.

7. Because of the dangerous nature of the SWAT team's missions, we are training for the worst-case scenarios, not just the best-case scenarios. To be sure, in a best-case scenario on a SWAT team mission, I am able to stay outside of the "hot zone" and will not need to hold or otherwise handle any officers' firearm. However, in the dynamic, high-risk environment that the SWAT team operates, I do not have the luxury to train only for that best-case scenario. I am trained and prepared

to enter the "hot zone" and render aid if the situation demands. I am trained and prepared to act if a SWAT officer is not immediately present to assist with an injured officer or armed suspect. That includes being comfortable with holding others' weapons, securing others' weapons, and otherwise making them safe.

8. It is not unusual that my SWAT team would have medics like me to attend SWAT school and participate in shooting drills. It is best practices. As the team medic, I attempt to adhere to the best practices for tactical medical providers such as those approved by the American College of Emergency Physicians (ACEP), as outlined in its textbook on tactical emergency medicine. *See* Campbell, et al., *Tactical Medicine Essentials* (2nd ed. 2020). Attached to this declaration are scanned excerpts from my copy of that textbook.

9. I also used ACEP's guidelines as set forth in that textbook as one of several references when designing the curriculum for the course I teach on tactical emergency medicine at a Chicago-area medical school.

10. I have attended conferences of ACEP's working group on tactical emergency medicine, called the Tactical and Law Enforcement Medicine Section. I plan to attend the next scheduled conference in October 2023.

11. Consistent with my own SWAT team and teaching experience, ACEP instructs that SWAT medics must be comfortable handling SWAT officers' weapons and that the "most valuable education" comes from participating in regular monthly training with the team. *Tactical Medicine Essentials* at 14. According to ACEP's best practices:

- "There is a consensus among SWAT unit leaders … about major areas that should be learned and practiced by TMPs [tactical medical providers]. These include specific SWAT unit tactics, weapons training, and immediate action drills." *Tactical Medicine Essentials* at 12.

- "Regardless of whether or not the medical personnel are armed, at a minimum all TMPs should learn and maintain skills in safe weapons handling and unloading, as well as techniques for rendering weapons safe. Participation in routine marksmanship training is desirable, and medical personnel should be familiar with all types of weapons used by the SWAT unit." *Tactical Medicine Essentials* at 14.

- "Weapons training for TMPs must stress that, in the tactical environment, weapons should not be 'fired and forgotten.' TMPs should maintain weapons-handling skills and always seek to improve on their education." *Tactical Medicine Essentials* at 14.

- "At a minimum, [a TMP] should be familiar with how to make these weapons 'safe' by manipulating the safety and magazine release, and ideally know how to fire these weapons under duress should the need arise. This is especially true if [a TMP is] not a law enforcement officer and ha[s] no formal law enforcement education." *Tactical Medicine Essentials* at 30.

- "Tactical medical providers (TMPs) must be competent with firearms….[A]s a TMP you must retain safe practices in weapons handling in order to be able to safely disarm downed officers and suspects when necessary." *Tactical Medicine Essentials* at 61.

- "[A] critically injured SWAT officer should allow a well-trusted and known SWAT officer or TMP to remove and secure his or her weapons. … [A TMP] must be knowledgeable and skilled in handling and making safe each type of weapon carried by the SWAT unit … includ[ing] the SWAT unit's long rifles." *Tactical Medicine Essentials* at 70-71.

- "The bottom line is that [a TMP] must have a baseline understanding of law enforcement and the operational aspects of the SWAT unit. In every unit, the primary role of the TMP is medical support, but, as in any uncontrolled environment, the unexpected sometimes occurs. You must be prepared to make a split-second decision when faced with an armed and high-threat criminal suspect. There will be times when a SWAT officer may not be immediately present to assist in resolving the situation. [A TMP] should learn and know use of force, self-defense laws, arrest and control techniques, and combat skills. Additional skills necessary in the tactical environment might include crowd control, weapon retention, and use of less-lethal weapons." *Tactical Medicine Essentials* at 13.

12. These foundational principles are the principles I attempt to abide by on the SWAT team and are consistent with the tactical medicine course I myself teach. They also reflect the reality that SWAT medics must be trained to enter the "hot zone" and render aid if the situation demands. Medics should be positioned to render aid "within a 30-second response time for all injured SWAT officers." *Tactical Medicine Essentials* at 10.

13. I have had to handle an AR-15 on a real-world mission. In 2021, the team responded to an armed and barricaded murder suspect. One of the operators had to switch to a less-lethal firearm. The officer handed me his AR-15 to secure in the back of our command vehicle. I checked to verify that the weapon was safe, and I placed the weapon in the interior of the vehicle where I knew it could remain safe and under my watch. I felt comfortable handling the officer's AR-15 because I had recently training with that firearm.

14. For these reasons, it is imperative that I am able to train with an AR-15 rifle during my SWAT team's monthly training sessions. But in order to do so, I must bring my own rifle. The SWAT team does not provide spare rifles to team members. And I'm not going to ask to borrow an AR-15 from one of the SWAT officers, which would deprive that officer of his training time.

15. Training with the SWAT team is necessary to maintain proficiency in the full array of skills involved in providing tactical medical care. Many of those skills focus on the medical aspects of my role. But it is also important that I maintain skill and confidence to handle the team's firearms, including AR-15s, on a mission if necessary. Not training with my own rifle jeopardizes my ability to render aid in a tactical environment. Not training with my own rifle alongside the team makes me less prepared to perform my role.

16. On average, I deploy on one to two missions each month with the SWAT team. Any one of those missions could require my medical intervention, including in the "hot zone." I can't know if the mission will be a best-case or worst-case scenario until the mission actually happens. For example, prior medics on the SWAT team had to accompany officers into a forest to search for an armed suspect. On that mission, there was no separation between the "hot zone" and the safety perimeter.

17. Not only do I have to keep my AR-15s and standard magazines for those rifles outside of the county, I must continue to keep my Glock 45 handgun for personal self-defense inoperable in my home. That handgun came standard with a 17-round magazine. I am banned from keeping or using a 17-round magazine in my home, or replacing it should I need to. I am not going to use a different magazine with that handgun that is not standard equipment because of my experience with non-standard magazines jamming. In the past, I have fired my Glock using a non-standard magazine and the firearm malfunctioned every two- to three rounds I fired. I have not used a non-standard magazine in my firearms since that time.

18. And soon, I expect I will also need to move my firearms out of the State altogether because of the new Illinois law unless I am able to get some preliminary relief. I understand that Illinois law will require me to register my AR-15 rifles between October 2023 and January 2024 if I want to keep them anywhere in the State. If I don't register, I will face severe criminal sanctions come January

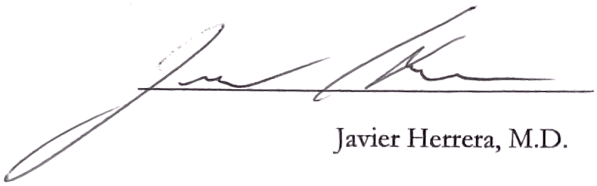
2024. I have no present intent to comply with the registration requirement because of the concerns explained in my earlier declaration. As a result, I am already making plans to move my rifles beyond state lines if I cannot get preliminary relief. That requires finding a willing out-of-state custodian who could keep my rifles, and whom I am comfortable giving custody of my rifles. I am not currently aware of any such out-of-state custodian. Identifying that person and making the required arrangements will entail substantial time that I do not have between my duties with the SWAT team, my shiftwork at the hospital, and my academic responsibilities.

19. For some time, I have wanted to challenge the Cook County and City of Chicago ordinances that preclude me from keeping certain firearms and standard magazines in my home. But I understood that courts here had rejected challenges to those or similar ordinances. While I am not a lawyer, I generally understand that the Supreme Court's recent decision in *New York State Rifle & Pistol v. Bruen* casts doubt on the courts' reasoning rejecting these earlier Second Amendment challenges. After *Bruen*, I began preparing to challenge the Cook County and City of Chicago ordinances. I could not file a lawsuit right away for various reasons including because my time was relatively scarce given my hours at the hospital and my academic responsibilities.

20. In January, while preparing to file my lawsuit challenging the Cook County and City of Chicago ordinances, I learned that Illinois would be passing a new law that leaves me uncertain about when, if ever, I could lawfully use my own firearms and standard magazines if I were involved in an armed self-defense encounter. I learned that new law would also soon require me to remove my firearms and standard magazines from the State altogether. I filed this lawsuit the same month that the Governor signed the new Illinois law.

21. Pursuant to 28 U.S.C. §1746, I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 13, 2023.



Javier Herrera, M.D.

Excerpts from Campbell, et al., *Tactical Medicine Essentials (2nd ed. 2020)*

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03029-7

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Project Management: S4Carlisle Publishing Services
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Text Design: Kristin E. Parker
Senior Media Development Editor: Troy Liston
Rights Specialist: Maria Leon Maimone
Cover Image: Courtesy of Dr. John Wipfler and Dr. Lawrence Heiskell.
Part Opener/Chapter Opener Images: Courtesy of Dr. John Wipfler.
Printing and Binding: LSC Communications
Cover Printing: LSC Communications

Library of Congress Cataloging-in-Publication Data

Library of Congress Cataloging-in-Publication Data unavailable at time of printing.

LCCN: 2019020763

6048

Printed in the United States of America
23 22 21 20 10 9 8 7 6 5 4 3 2 1

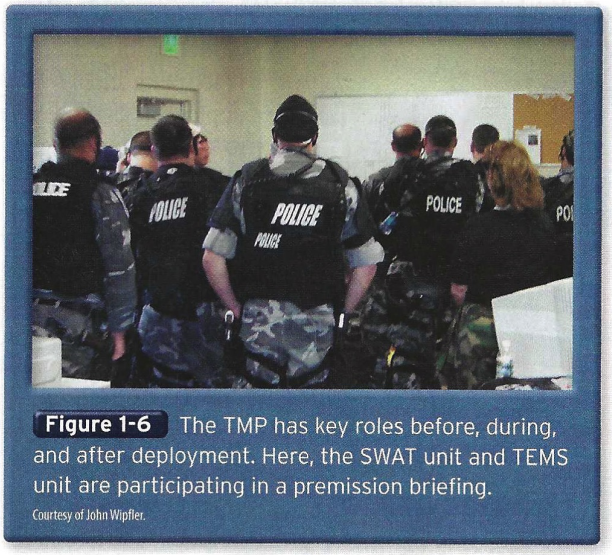

Figure 1-6 The TMP has key roles before, during, and after deployment. Here, the SWAT unit and TEMS unit are participating in a premission briefing.
Courtesy of John Wipfler.

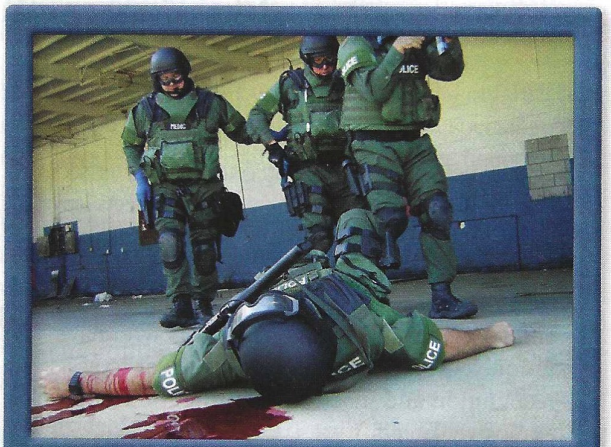

Figure 1-7 A TEMS unit conducting officer down drills during training.
Courtesy of Lawrence Heiskell.

- Preparing to deal with pertinent medical threats and hazards expected at a SWAT unit training event and during deployment
- Providing education in first aid and combat casualty care to SWAT officers, including:
  - Instruction in CPR, combat first aid, ballistics, field medicine, and other medically related topics that pertain to the tactical environment
  - Practicing "officer down" immediate action drills, extractions, and other scenarios **Figure 1-7**
- Identifying and preparing for any preexisting medical conditions of SWAT officers
- Making recommendations to optimize internal policies related to TEMS and general law enforcement health issues
- Serving as a resource for any medical concerns that affect the law enforcement agency

During deployment, the TEMS unit is responsible for:

- Remaining available to provide emergency medical care for those in need (ideally remaining close enough to respond within a 30-second response time for all injured SWAT officers)
- Participating in mission planning, preparing an assessment of medical threats, and providing appropriate advice while keeping the mission appropriately confidential to avoid any information leaks that would jeopardize the SWAT unit
- Preplanning and arranging emergency medical evacuation and transportation pertinent to the mission, including methods of transport, appropriate selection and notification of hospitals, and route planning
- Providing appropriate preventive and immediate medical care to SWAT officers, other law enforcement officers, and public safety personnel
- Providing secondary emergency care and triage for those in need, including bystanders, suspects, or others on site at the discretion of the SWAT unit leaders
- Providing "assessment and clearing" of suspects prior to incarceration as directed by the SWAT unit leader or commander
- Advising the command staff of developing medical concerns, and remaining available for medical consultation to the SWAT unit leadership
- Performing remote assessment of any downed victims in exposed areas and then advising the incident commander about the likely viability of the victims (their chances for survival)
- Improving SWAT unit performance and morale by the presence of immediate medical support, which has positive psychological benefits
- Functioning as a liaison with the local EMS system, hospitals, and officials from other public safety and law enforcement agencies

After a mission, the TEMS unit is responsible for:

- Participating in postincident debriefing and review, assisting command staff with analysis of the operation/training event and any medical care delivered, and making improvements to the TEMS unit, policies, and procedures as needed
- Reviewing and documenting all medical treatment and records relevant to operational or training missions

practice and policies modified specifically for the tactical environment. Follow the scope of practice and policies of your agency.

Command Systems: LIMS and NIMS

The Law Enforcement Incident Management System (LIMS) is based upon the **National Incident Management System (NIMS)**. NIMS is the standardized incident management scope of practice used throughout the United States, which is now required in all law enforcement operations. Under the LIMS system, there is a law enforcement incident commander (IC) who serves as command in most callouts **Figure 1-8**.

As in NIMS, under LIMS each law enforcement agency uses a similar scaleable incident management system but may elect to add or remove various components, such as the operations or planning sections. If the incident is large and involves multiple agencies, this framework may be included within a unified command with representatives from various agencies such as law enforcement, EMS, fire service, public works, and elected officials serving as the commanders in a unified command structure. However, only law enforcement managers command and direct law enforcement agency assets and operations.

Under LIMS, the safety officer and/or the TEMS unit can observe and report directly to the law enforcement IC any safety concerns, and can halt operations if a substantial hazard is discovered that will endanger personnel and the success of the mission. The planning section reports to the law enforcement IC and assists in providing viable plans to resolve the incident and intelligence on the suspects involved. The logistics and finance/administration sections secure the needed personnel and material items to support the operation. Logistics is also responsible for the staging of law enforcement, EMS, and other assets. The operations manager directly supervises tactical operations. Usually the entry team, tactical marksmen, and the TEMS unit report to the operations manager, and it is usually necessary for the TMP to interface through the external EMS system.

Tactical Medical Provider Training

Tactical Medicine Curriculum

There is currently no national standard TMP curriculum. There is a consensus among SWAT unit leaders, however, about the major areas that should be learned and practiced by TMPs. These include specific SWAT unit tactics, weapons training, and immediate action drills, as well as training in hazardous materials and bloodborne pathogen management.

In addition to completing a training program covering the essential knowledge and skills of tactical emergency medicine, you must also gain experience through routine training with the SWAT unit. Through ongoing SWAT unit trainings, you will learn about your specific unit's abilities, weapons, and tactics. Mastery of the specific SWAT unit tactics, weapons, immediate action drills, and many other important topics will come after multiple cooperative training exercises and real-world callouts. These experiences will enable you to gain the remainder of the knowledge and skills that will enable you to provide rapid, safe, and effective medical care in the tactical environment **Figure 1-9**.

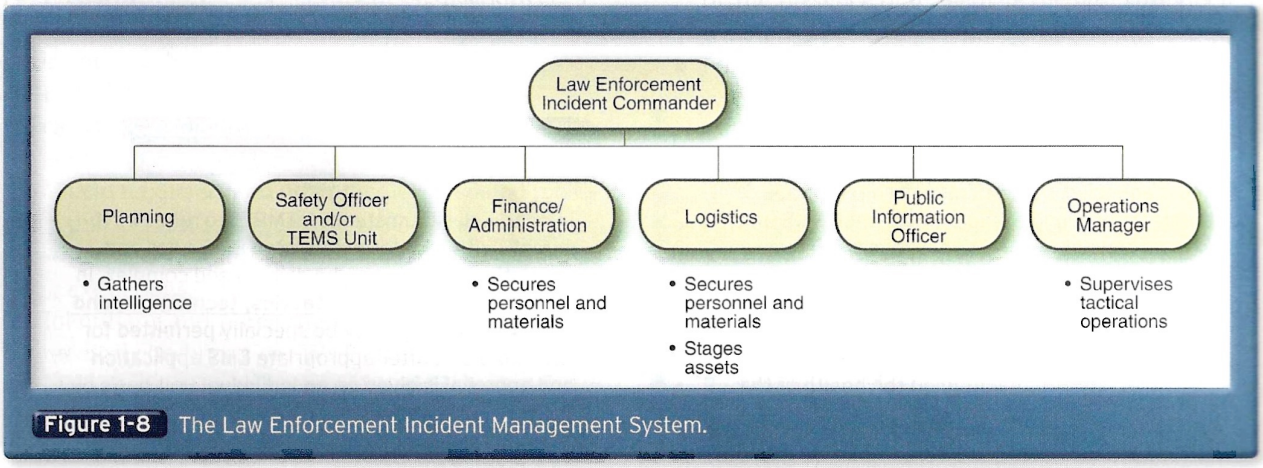

Figure 1-8 The Law Enforcement Incident Management System.

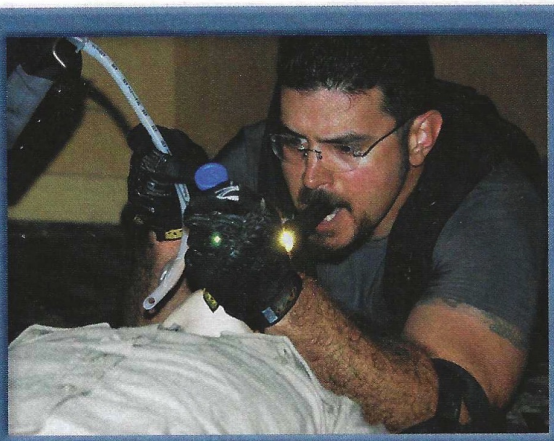

Figure 1-9 Cooperative training exercises enable TMPs to provide effective medical care in the tactical environment.
Courtesy of Lawrence Heiskell.

Figure 1-10 Law enforcement training highlights the unique hazards and life threats TMPs will face in the tactical enviroment.
Courtesy of Lawrence Heiskell.

Law Enforcement Training for Tactical Medical Providers

The law enforcement status and training required for tactical medical personnel is a joint decision of the leadership of each law enforcement agency, local EMS organization, and municipality associated with a TEMS unit. The options may vary between using fully trained and sworn law enforcement officers to provide medical support, as contrasted with using civilian medical personnel who have received baseline law enforcement and tactical training by working with the SWAT unit on an informal basis. In between these two options may be reserve police officer training, auxiliary deputy status, and other law enforcement positions.

There are several ways for TEMS unit personnel to acquire law enforcement training and possible certification, and the involved agencies should come to an agreement upon what will work best given the regional policies and political situations. A common approach is to have TMPs attend a reasonable amount of law enforcement training that they and their designated law enforcement agency mutually agree upon, within their time constraints, funding, and local policies. Law enforcement training will highlight the unique hazards and life threats faced by anyone entering the tactical environment **Figure 1-10**.

The bottom line is that you must have a baseline understanding of law enforcement and the operational aspects of the SWAT unit. In every unit, the primary role of the TMP is medical support, but, as in any uncontrolled environment, the unexpected sometimes occurs. You must be prepared to make a split-second

Figure 1-11 TMPs engaged in weapons familiarization and target practice.
Courtesy of Lawrence Heiskell.

decision when faced with an armed and high-threat criminal suspect. There will be times when a SWAT officer may not be immediately present to assist in resolving the situation. You should learn and know use of force, self-defense laws, arrest and control techniques, and combat skills. Additional skills necessary in the tactical environment might include crowd control, weapon retention, and use of less-lethal weapons **Figure 1-11**.

If the TEMS unit is authorized to carry self-defense weapons, you must complete initial training and qualification, and ongoing requalification weapons requirements. Most armed units require completion of

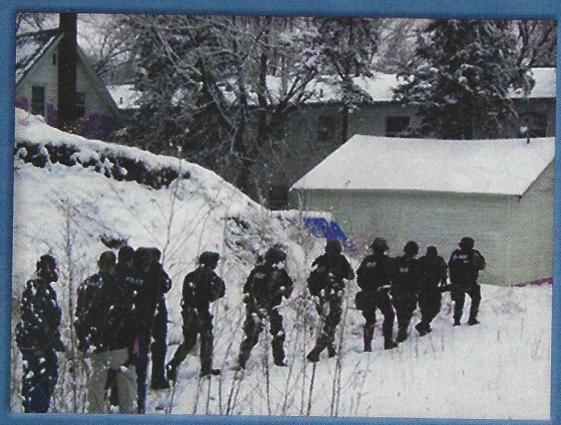

Figure 1-12 Armed TEMS units must complete all required weapons training.
Courtesy of John Wipfler.

Figure 1-13 TMPs should regularly train with their designated SWAT units to become familiar with SWAT tools and tactics.
Courtesy of Lawrence Heiskell.

training held to the same standard as a law enforcement officer in basic police academy **Figure 1-12**.

Regardless of whether or not the medical personnel are armed, at a minimum all TMPs should learn and maintain skills in safe weapons handling and unloading, as well as techniques for rendering weapons safe. Participation in routine marksmanship training is desirable, and medical personnel should be familiar with all types of weapons used by the SWAT unit.

Unit Training

You will receive perhaps your most valuable education as you routinely participate with your own SWAT unit on a monthly basis. Most SWAT units are part-time and practice once or twice a month for about 8 to 16 hours per month. Larger US cities may have a full-time SWAT unit (eg, Los Angeles, New York City) who train and participate in high-risk warrant service and tactical deployment essentially every day. Tactical training sessions offer a good opportunity to learn about and practice the unit's tactics and tools.

Safety

Weapons training for TMPs must stress that, in the tactical environment, weapons should not be "fired and forgotten." TMPs should maintain weapons-handling skills and always seek to improve on their education.

More importantly, training offers opportunities to practice downed officer immediate action drills and other skills in order to perfect and maintain your own tactical medical knowledge and skills.

Two components are necessary for effective routine TEMS training: TEMS unit and SWAT unit involvement. TEMS training should be well-coordinated with routine SWAT training in order to ensure that all personnel (medical and nonmedical) are familiarized with each other's tools, techniques, and skills **Figure 1-13**. Routine training for SWAT and TEMS personnel should include tactical law enforcement training for TMPs, combat first aid training for SWAT officers, and training specific to unique hazards of the tactical environment (eg, hazardous materials, bloodborne pathogens). Cross-training within the SWAT unit as well as with other agencies involved in responses is an important consideration.

Hazardous Materials Training

Due to the ever-present and increasing risk of exposure to caustic chemicals, radioactive terrorism, biologic and chemical warfare agents, nerve agents, poisons, booby traps, and clandestine drug laboratory hazards, you must be able to prevent self-exposure and contamination. You must also be able to identify, decontaminate, and treat other officers exposed to hazardous materials (hazmat). You must be properly equipped and trained to deal with hazmat contingencies, as well as prepare nonmedical personnel in preventive medicine and decontamination training. TEMS units should know how to perform hasty field expedient decontamination as well as participate in full-scale fire department-based hazmat team decontamination. Additional hazmat training can

- **Dignitary protection and/or executive protection.** A SWAT unit may provide motorcade and other protection of very important people (VIPs), such as elected officials (eg, president of the United States, prime ministers), wealthy business executives, well-known entertainers, and other wealthy individuals.
- **Clandestine laboratory raids.** Methamphetamine (meth) labs continue to increase in parts of the country. These illegal labs contain raw materials and toxic by-products that are carcinogenic.
- **Escaped-convict searches.** Prisoners may escape from incarceration or from law enforcement custody. These searches may take place in urban or remote wooded environments, and are often considered very high risk due to the fugitive criminal(s) at large.
- **Bomb threats.** These include packages left in a crowded location that may potentially be a bomb, thus requiring neutralization by a police bomb squad; improvised explosive devices (IEDs); or a search of a building after a phoned-in bomb threat.
- **National security incidents.** These include a direct threat on federal or state officials; release of chemical, biological, or nuclear agents; or simultaneous attacks by multiple terrorists.
- **Terrorist-initiated events.** Including a single active shooting or multiple attackers who may take hostages with the intent of exploding bombs and using machine guns to kill as many as possible at an opportune time when the press are present to document and spread the news of the terrorists' attacks.

Weapons and Tools

To ensure safety against threats posed by the high-risk tactical environment, most SWAT units carry pistols, long guns (eg, carbines, shotguns, or rifles), and less-lethal weapons (eg, impact weapons, shotgun beanbag-type rounds, TASERs). Most SWAT officers also carry at least one knife and some will carry backup weapons. Additionally, chemical munitions are useful and may be deployed to safely resolve a critical situation.

You must become and remain familiar with your unit's firearms and weapons systems, and acquire the ability to render them safe. Commonly used by the entry team is the M-4 style carbine-length M-16/AR-15 rifle that fires the .223-caliber (cal)/5.56-mm NATO cartridge, 40 S+W, and 9-mm **Figure 3-3**. Another commonly used weapon is the Heckler and Koch MP-5 submachine 9-mm gun. Marksmen use bolt-action or semiautomatic rifles chambered in .223 cal, .308 cal, and others. Many SWAT units utilize four to six different types of long guns and eight to twelve different types of pistols. At a minimum, you should be familiar with how to make these weapons "safe" by manipulating the safety and magazine release, and ideally know how to fire these weapons under duress should the need arise. This is especially true if you are not a law enforcement officer and have had no formal law enforcement education. Chapter 5, "Weapons Handling and Firearms Safety," covers securing a firearm safely in detail.

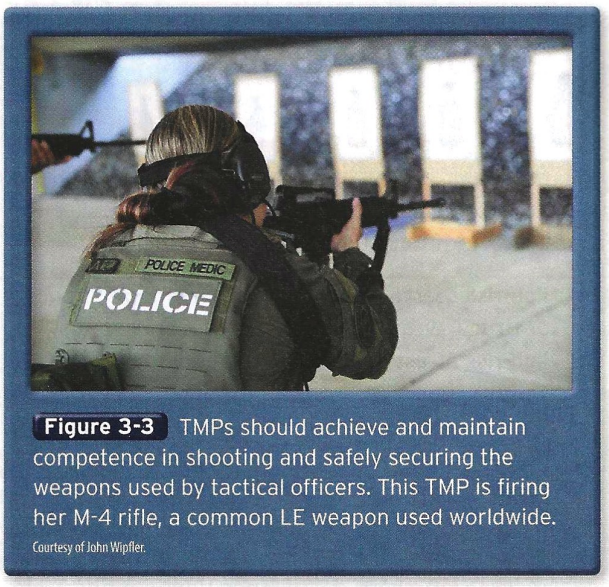

Figure 3-3 TMPs should achieve and maintain competence in shooting and safely securing the weapons used by tactical officers. This TMP is firing her M-4 rifle, a common LE weapon used worldwide.
Courtesy of John Wipfler.

Forcible Entry Tools

Different SWAT units carry a variety of forcible entry tools, protective gear, and surveillance tools **Figure 3-4**. A detailed review of all these devices is not listed in this textbook due to operational security concerns but, over time, you will learn about and further understand the wide variety of tools and tactics utilized to accomplish the mission. These devices are valuable tools; however, these tools can also cause injuries to the SWAT officers and suspects. The assessment and treatment of these injuries is discussed in Section 2 of this book, "Assessment and Management of Injuries."

Forcible entry tools may vary from simple heavy metal rams to breach a door, shotgun powdered metal ammunition rounds to shoot out locks and hinges, or explosive breaching devices. Power tools, such as a gas-powered circular breaching saw, can be used. If necessary, a cutting torch can be used to cut through and melt metal in order to breach an entryway **Figure 3-5**.

Weapons Handling and Firearms Safety

CHAPTER 5

OBJECTIVES

- List the five rules of firearms safety.
- Describe the common types of handguns.
- Describe the characteristics of the pistol.
- Describe the characteristics of a long gun.
- Describe the common types of a long gun.
- List the four components of ammunition.
- Describe the common types of bullets.
- Describe the basics of firearm marksmanship.
- Describe how to secure a firearm from a downed SWAT officer or suspect.

Introduction

Tactical medical providers (TMPs) must be competent with firearms. You may already have significant proficiency from prior training and experience or you may be new to firearms. No matter what your level of experience is, as a TMP you must retain safe practices in weapons handling in order to be able to safely disarm downed officers and suspects when necessary. This chapter discusses the steps toward achievement of this goal.

Firearms safety training and familiarization first should be learned in the classroom by formal instruction, and then gradually learned and reinforced by hands-on, supervised instruction, followed by routine training and weapons use. At an appropriate time and place, advanced firearms skills incorporated into close quarters battle, scenario-based training can be learned and refined. During training and in the tactical environment, the five rules of firearms safety must always be adhered to.

1. Treat every weapon as though it is loaded. You must handle a gun in the same manner whether or not it is thought to be loaded.
2. Never touch the trigger unless you have decided to shoot.
3. Always keep the weapon pointed in a safe direction. Never point the gun at anything you do not want to destroy. Follow the "laser rule." Imagine that a laser beam is constantly projected down through the barrel. You should never allow that beam to point at any part of your body or at a person or an object that you do not want to shoot.
4. Always be certain of your target and the background behind the target.
5. Always maintain control of your firearm and prevent unauthorized persons from gaining access to the gun **Figure 5-1**.

The fifth rule cannot be stressed enough, as many accidents are caused when the owner of the firearm stores the gun in an unsecured location or indulges in a moment of carelessness that results in a tragedy. You must take steps to prevent unauthorized use, including choosing a secure snatch-resistant holster (for pistols); obeying the state laws and lawfully transporting and storing the weapon in an appropriate gun case; using a safe, child-resistant box with rapidly accessible combination lock; or securely locking the weapon in a gun safe either at the police station or at home. If all five rules are followed, with rare exception, unintentional injuries should be prevented.

quarters battle, practice shooting while moving under the trained eye of experienced instructors. Learn to move quickly to cover, shoot on the move, and shoot behind cover. Learn how to scan 360 degrees, all around, and then low and high. Learn how to perform malfunction drills when your gun jams. Learn how to perform speed reloads under all conditions. Learn how to shoot weak-handed, kneeling, lying down, underneath cars, and in the dark with flashlights. Learn how to keep shooting even after you are shot and knocked to the ground. The list of skills and tactics to learn is long. Continue learning and make practice a part of your routine, just like exercise.

Securing a Firearm

Downed SWAT Officer Firearm Security

The threat of firearms is always present during tactical operations, regardless of whether they are discharged by SWAT officers or suspects using them unlawfully. An unintentional discharge could cause a bullet to strike a SWAT officer or TEMS provider. Bullets may unintentionally travel through walls and strike a SWAT officer on the other side. For example, a SWAT deployment approximately 10 years ago resulted in a SWAT officer being shot and killed at the back of a house when the tactical team marksman shot a suspect who exited the front door. The bullet struck the suspect and then traveled through several walls; tragically, it struck the SWAT officer who was getting ready to enter the house from the rear.

SWAT officers who are severely injured, cannot breathe properly, are in shock from heavy bleeding, or are confused from a head injury may become involved in an unintentional shooting **Figure 5-15**. Due to confusion, the SWAT officer may be unable to make appropriate decisions. If disoriented and lying on the ground severely injured, the downed SWAT officer may shoot reflexively at an approaching SWAT officer or TMP, mistakenly believing that the looming figure approaching is a threat.

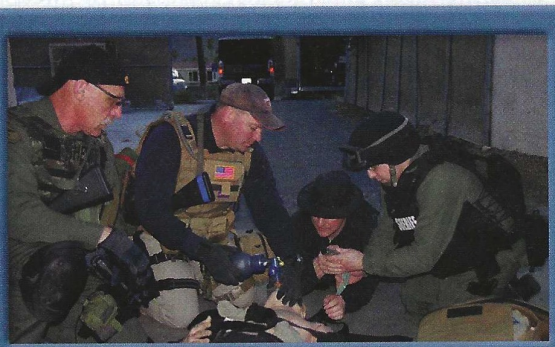

Figure 5-15 This training scenario involves multiple TMPs managing an airway of a downed hostage. Note how the officers on the left have properly slung their rifles i n a safe direction.
Photo by Lawrence Heiskell.

Because of this risk, you must cautiously approach and immediately assess the mental status of all injured or ill tactical officers (Chapter 11, "Patient Assessment in the Tactical Environment," discusses the patient assessment process in detail). The existing scene threats should also be taken into account (eg, Are there more suspects in the building who have yet to be apprehended, or are all suspects neutralized and the situation resolved?). If the SWAT officer needs to remain armed and appears alert and oriented, he or she should be allowed to retain weapons. However, any serious injury or altered mental status should precipitate the removal of all weapons from the downed SWAT officer.

What is the best way to remove a SWAT officer's weapons? An established scope of practice with your SWAT unit may dictate the procedure. Follow your agency's scope of practice and procedures. Ideally, a fellow SWAT officer should remove the weapons, and you should focus on patient assessment and medical treatment.

With every method of firearm security, the five rules of firearms safety absolutely must be adhered to.

1. Assume every gun is loaded and treat accordingly.
2. Keep your finger off of the trigger unless you are firing the weapon.
3. Never point the gun at anything you do not want to destroy. When handing the weapon off to a SWAT officer, ensure that the muzzle is pointed in a safe direction.
4. If a sudden threat should appear, make sure of your target and your background.
5. Maintain control of the firearm(s).

There are several ways of removing and securing weapons from downed SWAT officers. One method is

Safety

Routine training with the entire SWAT unit teaches SWAT officers that if they are injured, they will be expected to continue to fight and win. If they are critically injured and clearly unable to effectively fight, their weapons will be removed in most instances. If any serious difficulties arise in the tactical environment, the critically injured SWAT officer should allow a well-trusted and known SWAT officer or TMP to remove and secure his or her weapons.

Safety

You must be knowledgeable and skilled in handling and making safe each type of weapon carried by the SWAT unit. These include the SWAT unit's long rifles, shotguns, submachine guns, pistols, backup weapons, knives, grenade launchers, pepperball guns, TASERs, smoke grenades, gas munitions, distraction devices, explosive entry materials, and other weapons.

to simply switch the firearm safety level to "safe" and pass the weapon off to a SWAT officer. Another method is for you or a SWAT officer to:

1. Safely remove the weapon, keeping the barrel pointed in a safe direction and making sure that the safety selector switch is on "safe." The downed SWAT officer's hand and fingers should be away from the weapon and trigger.
2. Completely remove the magazine from the firearm.
3. Open the action and eject the round of ammunition out of the chamber.
4. Lock open the action so that the firearm is completely unloaded before handing it off.

The weapon should be pointed in a safe direction while being passed to a SWAT officer who can safely store and secure the weapons. If the downed SWAT officer's gun was discharged in the incident, then the firearm and ammunition and nearby empty shell casings are all evidence and should be treated accordingly. All weapons and ammunition and their location should be noted, tracked, and a chain of custody should be maintained.

Safety

A "blue-on-blue" shooting involves a law enforcement officer mistakenly shooting another law enforcement officer, thinking the other is a suspect with a gun. This happens too often, and is always a tragedy.

Suspect Firearm Security

A suspect who is injured or has been placed in the prone position and handcuffed should still be considered a significant threat until he or she has been thoroughly searched for handcuff keys (or facsimile) and weapons. Suspects often carry multiple weapons, and therefore they should be searched thoroughly for knives, razor blades, guns, hypodermic needles, and other hazards. You cannot be reasonably certain that a suspect is unarmed until after you have conducted a careful search, ideally with a metal detector wand.

It goes without saying that all firearms should be removed during your search. It may be handled in the standard manner if you are familiar with the weapon. If you are uncertain, then simply keep the weapon pointed in a safe direction with your finger off the trigger, and either hand it off to a SWAT officer, or place it on a secure, flat table nearby while pointed away from any others. Designate a SWAT officer to take possession of the weapon for evidence purposes. If the suspect has a gun removed, then the search should continue, including looking for a second or third gun, knife, or other weapon.

WRAP UP

Ready for Review

- The five rules of firearms safety absolutely must be adhered to:
  - Assume every gun is loaded and treat accordingly.
  - Keep your finger off the trigger unless you are firing the weapon.
  - Never point the gun at anything you do not want to destroy.
  - Always make certain of your target and your background before firing, especially if a threat should suddenly appear.
  - Maintain control of the firearm(s).
- Handguns are used most often in officer-involved shootings, and are most likely the weapons you will face.
- Pistols are semiautomatic firearms and are the type most commonly used by law enforcement in the United States. Pistols use a magazine and can be rapidly reloaded.
- Rifles are long-barreled firearms that usually require two hands to operate, are shoulder-fired, and have a barrel with rifling. Rifles are more accurate and more powerful than most handguns and frequently can utilize higher capacity magazines.

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JAVIER HERRERA, *Plaintiff*, v. KWAME RAOUL, in his official capacity as Attorney General of the State of Illinois, BRENDAN F. KELLY, in his official capacity as Director of the Illinois State Police, COOK COUNTY, a body politic and corporate, TONI PRECKWINKLE, in her official capacity County Board of Commissioners President, KIMBERLY M. FOXX, in her official capacity as Cook County State's Attorney, THOMAS J. DART, in his official capacity as Sheriff of Cook County, CITY OF CHICAGO, a body politic and corporate, DAVID O'NEAL BROWN, in his official capacity as Superintendent of Police for the Chicago Police Department, *Defendants.*	Case No. 1:23-cv-00532 Hon. Lindsay C. Jenkins **EXHIBIT 4** **KLECK DECLARATION**

DECLARATION OF PROFESSOR GARY KLECK

I, Gary Kleck, declare as follows:

1. I am over the age of 18, of sound mind, and otherwise competent to sign this declaration.

2. I am Dr. Gary Kleck, Emeritus Professor of Criminology & Criminal Justice at Florida State University. Counsel for plaintiffs have asked me to offer a rebuttal opinion regarding various declarations by Defendants' experts including Louis Klarevas, Phil Andrew, Randolph Roth, John

Donohue, Jillian Peterson, and James Yurgealitis's reliance on analysis by Lucy Allen. This report sets forth my qualifications, opinions, and scholarly foundation for those opinions.

3. I am being compensated for my time in this case at my customary rate of $400 per hour. My compensation is not contingent on the results of my analysis or the substance of my testimony.

BACKGROUND & QUALIFICATIONS

4. I am an emeritus Professor of Criminology and Criminal Justice at Florida State University. I received my doctorate in Sociology from the University of Illinois in 1979, where I received the University of Illinois Foundation Fellowship in Sociology. I was, at the time of my retirement in May 2016, the David J. Bordua Professor of Criminology at Florida State University, where I served on the faculty from 1978 to 2016.

5. My research has focused on the impact of firearms and gun control on violence, and I have been called "the dominant social scientist in the field of guns and crime." (William J. Vizzard, Shots in the Dark: The Policy, Politics, and Symbolism of Gun Control, 2003, p. 183).

6. I have published the most comprehensive reviews of evidence concerning guns and violence in the scholarly literature, which informs and serves as part of the basis of my opinions. I am the author of Point Blank: Guns and Violence in America, which won the 1993 Michael J. Hindelang Award of the American Society of Criminology, awarded to the book of the previous several years which "made the most outstanding contribution to criminology." I also authored Targeting Guns (1997) and, with Don B. Kates, Jr., The Great American Gun Debate (1997) and Armed (2001) - books that likewise addressed the topic of guns and violence.

7. I have also published scholarly research articles in virtually all the leading professional journals in my field. Specifically, my articles have been published in the American Sociological Review, American Journal of Sociology, Social Forces, Social Problems, Criminology, Journal of Criminal Law and Criminology, Law & Society Review, Journal of Research in Crime and Delinquency, Journal of Quantitative Criminology, Law & Contemporary Problems, Law and Human Behavior, Law & Policy Quarterly, Violence and Victims, Journal of the American Medical Association, and many other scholarly journals.

8. I have testified before Congress and state legislatures on gun control issues and worked as a consultant to the National Research Council, National Academy of Sciences Panel on the Understanding and Prevention of Violence, as a member of the U.S. Sentencing Commission's Drugs—Violence Task Force, and as a member of the Institute of Medicine and National Research Council Committee on Priorities for a Public Health Research Agenda to Reduce the Threat of Firearm-Related Violence. I am a referee for over a dozen professional journals and serve as a grant's consultant to the National Science Foundation.

9. Finally, I have taught doctoral students how to do research and evaluate the quality of research evidence and have taught graduate courses on research design and causal inference, statistical techniques, and survey research methodology.

10. My current curriculum vitae, which includes a full list of my qualifications and publications, is attached as Exhibit 1.

11. In the past ten years, I have been deposed and/or testified at trial in the following matters:

- *Heller v. District of Columbia*, U.S. District Court for the District of Columbia (deposed July 2, 2013)
- *Cook v. Hickenlooper*, U.S. District Court for the District of Colorado (deposed and testified March or April 2013)
- *Wilson v. Cook County*, U.S. District Court for the Northern District of Illinois (deposed September 16, 2013)
- *Kolbe v. O'Malley*, U.S. District Court for the District of Maryland (deposed January 2, 2014)
- *Barbra Schlifer Commemorative Clinic v. HMQ Canada* ("Cross-examined" [Canadian term for deposed] Feb. 24, 2014)
- *Friedman v. City of Highland Park*, U.S. District Court for the Northern District of Illinois (deposed May or June 2014)
- *Tracy Rifle and Pistol v. Harris*, U.S. District Court for the Eastern District of California (deposed November 2, 2016)
- *Flanagan v. Becerra*, U.S. District Court for the Central District of California (deposed July 25, 2017)
- *Worman v. Baker*, U.S. District Court for the District of Massachusetts (deposed October 25, 2017)
- *Duncan v. Becerra*, U.S. District Court for the Southern District of California (deposed January 3, 2018)
- *MSI v. Hogan*, U.S. District Court for the District of Maryland (deposed May 18, 2018)

- *Association Of New Jersey Rifle & Pistol Clubs, Inc. v. Grewel*, U.S. District Court District for the District of New Jersey (deposed August 2, 2018; trial testimony August 17, 2018)
- *Rupp v. Becerra*, U.S. District Court for the Central District of California (deposed December 12, 2018)
- *NRA v. Swearingen*, U.S. District Court for the Northern District of Florida, (deposed via Zoom August 13, 2020)
- *Maryland Shall Issue v. Anne Arundel County*, U.S. District Court for the District of Maryland (deposed via Zoom September 29, 2022)

OPINIONS AND RESPONSES TO DEFENDANTS' EXPERTS

I. Claims About the Magnitude and Threat of Mass Shootings, Including Responses to Declarations of Louis Klarevas

12. Klarevas makes the extraordinary claim that "mass shootings presently pose the deadliest threat to the safety of American society in the post-9/11 era" (¶10). The claim is patently false, and the evidence he cites that supposedly supports it is irrelevant to the claim.

13. The phrase "deadliest threat" is a claim about relative risk. That is, it implies a comparison of the risk from mass shootings with other risks. The evidence that Klarevas cites (p. 6) does not make any comparison of the risk of "gun massacres" (which he defines as incidents involving 6 or more dead) to any other "threat to the safety of American society." The omission is understandable, since "gun massacres" are among the least significant threats to the safety of Americans.

14. In his Exhibit 1 article, Klarevas documented 53 "gun massacres" (which he defines as incidents involving 6 or more dead), in which an aggregate total of 560 people were killed, over

the "post-9/11 period" from 2002 through 2017 (the article's data do not go past 2017). This is a period of 16 years, so his own figures imply that an average of 35 Americans have been killed in "gun massacres" per year (560/16=35). To put this number in perspective, 17,250 Americans were killed in criminal homicides of all types in 2016 (FBI 2017). Thus, only 1/10th of 1% of all murder victims were killed in "gun massacres."

15. Alternatively, we can state the seriousness of the threat to the safety of Americans by computing the fraction of Americans who will be killed in a "gun massacre" in a given year. Since there were about 323,127,513 Americans in 2016, the annual average of 35 deaths implies that the probability of an American dying in a "gun massacre" is about 0.000000108, or 0.0108 per 100,000 population—about 1 in 9.2 million. As a point of comparison, Lucy Allen, another expert often used by defendants in gun cases and relied upon by Defendants' expert Yurgealitis here, has calculated that the rate of Americans dying because they were struck by lightning is 0.09 per 100,000 population (Allen 2017, p. 16). Thus, the risk of an American being killed in a "gun massacre" is about 1/8th of the risk (0.0108/0.090=0.12 or 1/8th) of being killed by a bolt of lightning—itself a freakishly rare event. However horrific individual mass shootings may be, it is absurd to describe their threat to the safety of Americans as "the deadliest threat to the safety of American society in the post-9/11 era."

16. The evidence Klarevas apparently meant to support this claim (State Dec. Vol. 1 p. 6, County Dec. p. 7) turns out to be nothing more than an observation that the number of deaths in "gun massacres" is high – an assertion that is true by definition since Klarevas defined "gun massacres" as shootings in which large numbers of victims were killed.

17. Next Klarevas notes that more people are killed in incidents in which "assault weapons" (AWs) or large-capacity magazines (LCMs) are used. As a bald statement of statistical fact, the assertion is accurate, but Klarevas' phrasing implies that the use of AWs/LCMs somehow *causes* more people to be killed. For example, he asserts that "high-fatality mass shootings involving assault weapons and/or LCMs, on average, *have resulted* in a substantially larger loss of life than similar incidents that did not involve assault weapons and/or LCMs (¶10, emphasis added). He later draws from this correlation the conclusion that reducing access to AWS/LCMs will cause fewer fatalities. *See, e.g.*, Klaveras State Dec. p. 28-29. This does not logically follow unless he was asserting that AW/LCM use is at least a partial cause of the higher fatality counts in mass shootings.

18. Nothing is his evidence supports the interpretation that this correlation that it reflects a causal effect. Indeed, Klarevas offers no explanation of how such a causal effect could operate. For example, it has been established that mass shooters do not need LCMs to kill larger numbers of victims, that use of smaller magazines necessitating more reloads by the shooter would not result in more bystanders tackling the shooter and ending the attack, and that more reloads would not result in additional victims escaping (Kleck 2016). Klarevas does not refute these facts or offer any alternative explanation of how AW/LCM use affects the casualty count in mass shootings.

19. The obvious alternative explanation of this correlation between fatality counts and AW/LCM use by mass shooters is simply that aggressors with more lethal intentions (they want to hurt more people) are (1) more likely to kill many people, and (2) are more likely to prepare to do so by acquiring weapons they believe, accurately or not, are suited to this deadly task. Thus, this correlation would exist even if AW/LCM use had no causal effect whatsoever on the casualty count.

The only way to rule out this interpretation of the correlation as a spurious (noncausal) association would be to statistically control for aggressor lethality. Klarevas does not do this.

20. Next, Klarevas claims (¶10) that "mass shootings resulting in double-digit fatalities are a relatively modern phenomena in American history, largely related to the use of assault weapons and LCMs." This is a compound claim asserting both that (1) gun massacres are largely confined to the recent past, and that (2) these incidents are "related to" the use of AWs/LCMs.

21. The first assertion cannot be supported or tested by the data Klarevas used. Klarevas claims to have established trends going back to 1776, using a database called the Newspaper Archive. Klaveras State Dec. Vol. 1 pp. 19-21; Klaveras County Dec. pp. 16-18. He describes this as a source that contains articles from "local and major metropolitan newspapers dating back to 1607." Klaveras State Dec. Vol. 1 p. 18 n.11; Klaveras County Dec. pp. 16 n.12. This is a misleadingly incomplete description. This archive includes *a few* local newspapers going back that far. Prior to the 20th century, however, most of the nation was not covered by these few local newspapers, so correspondingly few mass murders would be covered by these sources.

22. This not only results in a gross undercount of mass shootings in earlier periods, but it also gives a misleading impression of trends over time. Since the share of the population covered by newspapers included in this archive increased over time, the share of mass shootings covered in an archive of newspaper stories would also increase, even if there was no actual increase in the national number of mass shootings. Thus, the appearance of increasing mass shooting prevalence in Klarevas' Table 7 in his Declaration for the State (and Table 6 in his Declaration for the County) is at least partly just a reflection of historical increases in the share of the nation's events that were

covered by newspapers. Consequently, Klarevas had no reliable information on trends in mass shootings for any part of the nation's history up until this increase in newspaper coverage levelled off sometime in the 20th century. His data can tell us nothing about trends in mass shooting frequency for earlier periods.

23. The scope of Klarevas's claims about historical trends is also extremely constricted by the arbitrary limits he placed on what kinds of mass shootings he was willing to count. Those familiar with the history of the numerous firearm massacres of native Americans by gun-wielding soldiers of the U.S. Army or militias in the 18th and 19th centuries might wonder why they do not show up in Klarevas' data. A footnote explains why: "Incidents of large-scale, inter-group violence such as mob violence, rioting, combat or battle skirmishes, and attacks initiated by authorities acting in their official capacity were excluded." Klaveras State Dec. Vol. 1 p. 18 n.11; Klaveras County Dec. pp. 16 n.12. Thus, Klarevas' claim amounts to asserting that prior to the 20th century there were no mass shootings – except when there were.

24. If nearly all the mass shootings in these earlier periods fell into these excluded categories, Klarevas's arbitrary definitional decisions had the effect of magically making it seem that mass shootings are exclusively a product of very recent times - the impression clearly left by his Table 7 and Figure 12 in his Declaration for the State (and Table 6 and Figure 9 in his Declaration for the County). The nation's earlier history of mass shootings simply vanishes. This definitional maneuver, however, was necessary if Klarevas was to create the impression that mass shootings became frequent only when AWs and LCM-equipped firearms became common. Earlier mass shootings may

have differed from our contemporary stereotypes of what a mass shooting is, but the relevant historical reality is that Americans were able to carry out hundreds of mass shootings before the late 20th century without benefit of AWs or LCMs (see Brown 1970 for examples of massacres of native Americans), just as is true today.

25. An even more fundamental problem with Klarevas' analysis lies in the narrow focus on mass murders committed *with firearms*. Virtually all of the mass murders with very high fatality counts in the U.S. have been committed by means *other than shooting* (Duwe 2007). Most prominently, the 9-11 mass murders of nearly 3,000 Americans were committed by terrorists wielding box cutters to crash airliners. More commonly, virtually all mass murders with very high fatality counts in the 20th century were committed using arson, or occasionally with explosives (Duwe 2007). Only two mass murders with over 32 dead in the 20th century were committed with firearms (Klarevas State Vol. 1 Table 7; Klaveras County Table 6), while all others were committed with non-firearms methods (Duwe 2007). The obvious point is that it is not necessary to use firearms of *any* kind to murder large numbers of people, never mind AWs or firearms equipped with LCMs.

26. Next, Klarevas (¶10) makes the curious statement that "assault weapons are used by private citizens with a far greater frequency to perpetrate mass shootings than to stop mass shootings." The statement is odd partly because, to my knowledge, opponents of restrictions on AWs or LCMs do not make any claims that they need those arms to stop mass shootings, versus many other purposes including keeping them in their home for self-defense. Klarevas is knocking down a straw man.

27. The phrasing of the statement also suggests that a cost-benefit comparison is being made, between (1) the cost of AW/LCM availability supposedly causing mass shootings and (2) the benefit of using AWs or LCMs to "stop mass shootings." This is irrelevant to policymakmg regarding restrictions on guns, since the benefit of owning or using guns for self-protection largely concerns defense against *ordinary crime*, not mass shootings in particular. As previously noted, mass shootings claim only a negligible share of the risk of criminal victimization, so the ability to disrupt mass shootings would constitute only a negligible share of the benefit of owning or using guns for protection. For this reason, Klarevas's entire Section IV discussion (State Dec. Vol. 1 pp. 22-24; County Dec. pp. 20-21) is irrelevant to the relative costs and benefits of the availability of AWs and LCMs in other obvious scenarios in which they could be lawfully used.

28. Next, Klarevas states (¶10) that "handguns, as opposed to rifles (let alone rifles that qualify as assault weapons), are the most commonly owned firearms in the United States." The data on which he relies (p. 26), however, do not pertain to which kinds of firearms are presently *owned* by Americans, nor do they pertain to the number of "firearms in civilian circulation." Klaveras State Dec. Vol. 1 p. 26 & Figure 14; Klaveras County Dec. p. 23 & Figure 11. Instead they pertain only to recently (in 2000-2020) manufactured or imported firearms, i.e. *additions* to the civilian firearms stock. *See* Klaveras State Dec. Vol. 1 p. 25 n. 27; Klaveras County Dec. p. 23 n. 28. These data can say nothing about what share of the guns presently owned by Americans are handguns because they effectively ignore handguns that were already a part of the gun stock before 2000. That is, Klarevas was making a claim about the present share of currently owned guns that are handguns based on data pertaining exclusively to guns *added* to the firearms stock relatively recently, in a period when

handguns dominated more than in earlier decades. This is a crucial distinction because firearms are very durable and valuable objects, such that many guns owned today were already a part of the civilian firearms stock prior to 2000, when the handgun share was lower. Handguns claimed a much smaller share of the firearms added to the stock of firearms in earlier decades. For example, in 1970 just 35% of the guns added to the U.S. civilian stock were handguns (Kleck 1997, p. 96; Table 1 herein). Even by 1980, handguns constituted only 43% of the guns added to the civilian firearms stock.

29. If Klarevas had properly taken account of guns added to the U.S. stock prior to 2000, the handgun share would have been lower than the 50% he claims. Klaveras State Dec. Vol. 1 p. 26 & Figure 14; Klaveras County Dec. p. 23 & Figure 11. Table 1 below takes account of all guns added to the U.S. stock from 1946 through 2018, not just in the brief recent period covered by Klarevas, and it shows that just 41.8% of the cumulated civilian firearms stock as of the end of 2018 were handguns (176,703,588 handguns out of 422,966,803 total guns).

Table 1. Size of the U.S. Civilian Gun Stock, 1945-2018

	Net Additions to Stock (a)			Cumulated Stock (b)		Guns / 1000 pop (c)	
Year	**Handguns**	**Long Guns**	**Total**	**Handguns**	**Total**	**Handguns**	**Total**
1899-1945	12657618	34251565	46909183	12657618	46909183	94.9	351.6
1946	176745	1356620	1533365	12834363	48442548	91.2	344.3
1947	264256	1836669	2100925	13098619	50543473	91.3	350.8
1948	444034	2215524	2659558	13542653	53203031	92.7	362.6
1949	262504	1940925	2203429	13805157	55406460	92.9	371.1
1950	278038	2217583	2495621	14083195	57902081	93.5	381.3
1951	348373	1738210	2086583	14431568	59988664	94.1	389.6
1952	454229	1503422	1957651	14885797	61946315	95.6	396.1
1953	415857	1583063	1998920	15301654	63945235	96.7	402.3

1954	376455	1236362	1612817	15678109	65558052	97.3	405
1955	429237	1399846	1829083	16107346	67387135	98	408.2
1956	534964	1513834	2048798	16642310	69435933	99.5	413.1
1957	538032	1442544	1980576	17180342	71416509	100.8	417.2
1958	519362	1227579	1746941	17699704	73163450	102.1	420.1
1959	648672	1526066	2174738	18348376	75338188	103.9	425.3
1960	602843	1560034	2162877	18951219	77501065	105.4	430.6
1961	561742	1473809	2035551	19512961	79536616	106.6	434.6
1962	598649	1467719	2066368	20111610	81602984	108.3	439.3
1963	676062	1555762	2231824	20787672	83834808	110.3	444.8
1964	744273	1778620	2522893	21531945	86357701	112.6	451.8
1965	1013300	2107921	3121221	22545215	89478922	116.5	462.4
1966	1212817	2309250	3522067	22758062	93000989	121.5	475.5
1967	1673417	2413345	4086762	25431479	97087751	128.8	491.7
1968	2414724	2799776	5214500	27846203	102302251	139.7	513.1
1969	1725383	3084186	4809569	29571586	107111820	146.8	532
1970	1673227	3132686	4805913	31244813	111917733	153.2	548.7
1971	1777862	3233186	5011048	33022675	116928781	160.1	567.3
1972	2106883	3269316	5376199	35129558	122304980	168.7	587.7
1973	1781261	3930432	5711693	36710819	128016673	175.9	610.3
1974	2175818	4394790	6570608	39086637	134587281	184.9	637
1975	1995077	3332767	5327844	41081714	139915125	192.8	657.1
1976	2026689	3708975	5735664	43108403	145650789	200.8	678.5
1977	1914050	3183161	5097211	45022453	150748000	208.1	696.7
1978	1972498	3444020	5416518	46994951	156164518	215.3	715.6
1979	2231088	3493255	5724343	49226039	161888861	219.2	720.9
1980	2481230	3311496	5792726	51707269	167681587	227.5	737.9
1981	2612200	2868968	5481168	54319469	173162755	236.5	753.9
1982	2469671	2486464	4956135	56789140	178118890	244.8	767.8
1983	1943069	2111304	4054373	58732209	182173263	250.7	777.6
1984	1904029	2506575	4410604	60636238	186583867	257.1	791.2
1985	1684754	2289515	3974269	62320992	190558136	261.9	800.9
1986	1538080	2178190	3540637	63959072	194196773	266.3	808.7
1987	1842145	2668607	4323951	65801217	198522724	271.6	819.4
1988	2234883	2604824	4830214	68036100	203352938	278.3	831.7
1989	2353087	2769701	5113576	70389187	208466514	285.2	844.6
1990	2109394	2224544	4318410	72498581	212784924	290.4	852.4
1991	1941977	1930422	3837827	74440558	216622751	294.3	856.3
1992	2802490	3675942	6469113	77243048	223091864	301.1	869.7

1993	3880773	3878055	7756056	81123821	230847920	312.1	888.2
1994	3324238	3316541	6634310	84448059	237482230	320.9	902.5
1995	2199420	2712789	4902135	86647479	242384365	325.4	910.3
1996	1820847	2569347	4378347	88468326	246762704	328.4	916
1997	1772849	2469663	4289499	90241175	251052203	331	920.8
1998	1727548	2716952	4464837	91968723	255517040	333.4	926.3
1999	1556003	3124416	4683654	93524726	260200694	335.2	932.5
2000	1205095	2391755	3596850	94729821	263797552	335.6	934.7
2001	882166	1867508	2749674	95611987	266547226	335.1	934.2
2002	1995332	3117157	5112489	97607319	271659715	338.9	943.3
2003	1923026	2625708	4548734	99530345	276208449	342.3	949.8
2004	1828395	2952787	4781182	101358740	280989631	345.9	958.9
2005	1883511	2974636	4858147	103242251	285847778	349.1	966.5
2006	2358631	3095672	5454303	105600882	291302081	353.7	976.4
2007	2914690	3344090	6258280	108515572	297560361	359.8	986.7
2008	3165183	3155843	6321026	111680755	303881387	366.9	998.4
2009	4514639	3855386	8370025	116195394	312251412	378.5	1017.1
2010	4402181	2761267	7163448	120597575	319414860	388.7	1029.6
2011	4752010	4573483	9497402	125349585	328912262	402.3	1055.6
2012	6634485	6210392	13135646	131984070	342047908	420.5	1089.8
2013	8073647	7445169	16031210	140057717	358079118	443	1132.7
2014	6695705	5506759	12202524	146753482	370281642	460.6	1162.1
2015	6749106	5750678	12499784	153502588	382781426	478.1	1192.3
2016	8667213	6382174	15049387	162169801	397830813	501.9	1231.2
2017	7402669	4172777	12331748	169572470	410162561	521.8	1262.1
2018	7131118	4589277	12804242	176703588	422966803	540.9	1294.7

Source: Kleck 1997, p.96

Notes: (a) Domestically manufactured guns minus exported guns plus imported guns within each gun type; (b) As of the end of the calendar year; (c) Based on resident population as of July 1. Net Additions to Stock equals the number of firearms manufactured, minus the number exported, plus the number imported in each calendar year. Totals manufactured exclude firearms made for the U.S. military but include guns purchased by domestic law enforcement agencies. Import figures prior to 1992 covered Fiscal years; these figures have been treated as if they apply to the corresponding calendar year. Import figures for 1992 covered five quarters because this was a transitional year from the fiscal year period to the calendar year period; they were treated as if they pertained to calendar year 1992. "Total" columns include gun types not separately tabulated in the Handguns and Long guns categories. "Handguns" figures encompass pistols and revolvers while "Long guns" figures encompass rifles, shotguns, and combination guns. See Kleck 1991, pp. 17-18, 451-454 for further details and limitations of the data.

30. Klarevas claims that a large share of mass shootings involve LCM use. Klaveras State Dec. Vol. 1 Figure 7 and accompanying text; Klaveras County Dec. Figure 8 and accompanying text. His principal tactic to advance this claim is to restrict his analyses to only an extremely rare subset of mass shootings, those with a huge number (10 or more) of fatalities (see, for example, Klaveras State Dec. Vol. 1 Table 7). This renders his claim trivial because it pertains only to a tiny subset of mass shootings ("double-digit fatality" incidents) – shooting incidents that are even more freakishly rare than mass shootings as a whole. He shows that 23 of 30 of these extreme cases involved LCMs (State Dec. Table 7; County Dec. Table 6), or 77%. Of course, Klarevas could have gone even further and analyzed only cases with over 50 deaths, since he then would have been able to report that *100%* of this set involved LCM use. This is because there was only one such incident and it did indeed involve LCM use (the Las Vegas shootings included in his State Dec. Table 7 and County Dec. Table 6). Such an "analysis" of a single cased would be perceived by most scholars as pointless, but it is only marginally more pointless than analyzing only the most extreme 30 cases out of hundreds of mass shootings.

31. Over the entire history of the United States, Klarevas was able to identify just 30 mass shootings with 10 or more deaths – fewer than one per year for the entire country. Even over the most recent 10 years, when such incidents became relatively more common, the average was just 1.4 incidents per year (14 shooting/10 years=1.4). In light of how extremely rare these incidents are, the share of them that involved LCM use is trivial and almost entirely irrelevant to policy-making. The more Klarevas confines his claims to tiny subsets of shooting incidents, the less relevant they

become to the likely benefits of legislating restrictions on AWs or LCMs. To put the issue in perspective with reference specifically to Illinois, Klarevas' own data indicate that the state has *never* experienced a "double-digit fatality incident" (State Dec. Table 7; County Dec. Table 6). Thus, based on previous history, Illinois could expect to prevent *zero* "double-digit fatality incidents" in the state by placing restrictions on AWs or LCMs.

32. If one instead covers *all* mass shootings, employing the commonly used cut-off of four or more fatalities, one finds that only about 14.9% of mass shootings involve LCM use.

Table 2. Prevalence of LCM Use in *All* Mass Shootings (4+ dead), 2014-2022

Year	Mass Shootings	LCM-involved Mass Shootings
2014	16	0
2015	21	4
2016	25	4
2017	18	4
2018	15	3
2019	30	4
2020	19	0
2021	22	6
2022	35	5
2014 to 2022	201	30 (14.9%)

Sources: Counts of mass shootings – Gun Violence Archive at https://www.gunviolencearchive.org/.
Counts of LCM-involved mass shootings – Violence Policy Center report at https://vpc.org/fact_sht/VPCshootinglist.pdf. Note that the 2021 count includes one LCM-involved incident that VPC staff missed, occurring on 5-9-21 in Colorado Springs, CO.

Notes: Mass shootings are defined here as incidents in which 4 or more people are killed by gunshot in a single incident. LCM-involved means that the shooter(s) was (were) known to have possessed during the incident – and possibly used – a magazine capable of holding more than 10 rounds.

33. As to whether LCM use is common in *all* mass shootings (4+ fatalities) – as distinct from the tiny "high fatality" subset of mass shootings, the most comprehensive data available indicate that only 14.9% of mass shootings were known to involve LCMs (Table 2).

34. Even 14.9% is a generous estimate of the frequency of LCM *use*, since a mass shooting was classified as "LCM-involved" even if all that was known about LCMs was that the offender *possessed* one or more LCMs during the incident. An offender might have possessed an LCM but only fired guns not equipped with an LCM. Or the offender might have fired a gun while it was equipped with an LCM, but fired no more than 10 rounds from the gun—something the shooter could also have done with a magazine holding 10 or fewer rounds. In such cases, it would be misleading to describe the shooter as "using" an LCM. In sum, it would be more accurate to say, contrary to Klarevas, that mass shooters *rarely* use LCMs.

35. The extremely high cut-off number of deaths that Klarevas used to define the set of shootings to analyze also allowed him to claim that there has recently been an upward trend in mass shootings—an assertion that could not be sustained if he used the cut-off of four or more deaths more commonly used by other scholars to define mass shootings. If one uses this cut-off, there has been no trend in recent years. Table 2 shows that, with the exception of 2022, there have been only slight erratic fluctuations in the past decade around an average of about 22 mass shootings per year.

Indeed, if one were to selectively focus only on the trends from 2016 to 2017, or from 2017 to 2018, or from 2019 to 2020, one could even claim that there has been a recent *downward* trend in mass shootings. Taking the entire 2014-2022 period as a whole, however, there has been no recent upward trend in mass shootings, but only erratic short-term fluctuations up and down. It was only when Klarevas limited his focus to "double-digit fatality incidents" that the data fit his claim of a recent increase in the frequency of mass shootings (Klarevas State Dec. Vol. 1 Figures 12 & 13; Klarevas County Dec. Figures 9 & 10).

36. Klarevas also asserts that the supposed increase in mass shootings was due to increased ownership of AWs and LCMs. The problem with his claims is that he never measures levels of ownership of AWs and LCMs, and thus cannot show that increases in ownership of AWs and LCMs correlated with increases in mass shootings. None of the data sources he cites permits measurement of trends in AW ownership. This is partly a function of the complexity of legal definitions of AWs, combined with the absence of detail in available data sources that is needed to judge whether guns are AWs. Thus, a law may define an AW as a semi-automatic firearm equipped with 2 or more "military-style" features such as flash suppressors or bayonet lugs, but no data sources of guns owned, manufactured, or imported (including those used by Klarevas) provide that kind of detail. In sum, Klarevas had no credible evidence on whether increases in mass shootings correlated over time with availability of AWs or LCMs, for the simple reason that he could not measure the latter.

37. In particular, the NSSF survey of "modern sporting rifles" (MSRs) cited in Klarevas's Declarations (State Dec. p. 24 & n. 22; County Dec. p. 22 & n. 23) does not establish how many AWs or assault rifles are owned by Americans, for at least two reasons: (1) the survey was based on

a self-selected sample and thus was not based on a representative sample of the U.S. population or U.S. gun owners, and (2) MSRs do not necessarily correspond to either AWs or "assault rifles."

38. Klarevas accurately notes that there are higher numbers of fatalities in mass shootings that involve AWs or LCMs. The policy-relevant question, however, is whether use of AWs or LCMs by mass shooters *causes* higher numbers of fatalities. If this association is instead spurious, and AW/LCM use does not cause higher casualty counts, then reducing use of AWs or LCMs (whether by legal restrictions or otherwise) cannot cause reductions in mass shooting fatalities. Nothing in Klarevas's report establishes that this association reflects a causal effect of AW/LCM use on casualty counts. He did nothing to rule out the possibility that both the higher casualty counts and the shooter's choice to use LCMs could be due to the common effect of offender lethality. That is, aggressors determined to kill larger numbers of victims are more likely to actually do so (lethality of intent affects fatality counts), and are also more likely to acquire and use AWs or LCMs in their crimes (lethality of intent affects weapon choice). Klarevas did not control for *any* potentially confounding variables, including offender lethality, so he had no legitimate foundation for concluding—or hinting to readers—that LCM use caused higher casualty counts. And if there is no causal effect of LCM use on casualty counts, there is no logical basis for believing that reducing LCM availability and use will cause a reduction in mass shooting casualties.

39. Klarevas presents a theory of *why* LCM use might increase casualty counts that is either contradicted by available evidence or is pure speculation. Reloading creates a pause in firing that bystanders theoretically might use to tackle the shooter and stop the killing, but there are no clear cases of this actually happening in the U.S. in the past quarter of a century. The handful of incidents

claimed to fit this description all turn out to be incidents in which the pause in shooting exploited by bystanders to tackle the shooter may have been due to the gun jamming—something that can happen with magazines of any capacity. Likewise, reloading does not slow the shooters rate of fire, which might have allowed more prospective victims to escape or hide (Kleck 2016). If we eliminate these purported mechanisms, what explanation remains for why use of an LCM by a mass shooter would increase how many people he hurts? Conversely, why would preventing LCM use through a law banning LCMs decrease the number hurt? Klarevas does not say.

40. Klarevas cites an anecdote to support his speculation that an incident with relatively few victims *would have* resulted in more casualties if the shooter had possessed an AW or LCM (p. 30). The claim is not only pure guesswork on Klarevas' part, but it is also based as his mischaracterization of what happened in this incident. Klarevas claimed that the shooter in a California synagogue attack was "chased away" by a congregant when the shooter stopped to reload, and that because of California's gun laws, reloading "appears to have been extremely difficult given that he did not have assault weapon features on his rifle that facilitated fast reloading." Klarevas State Dec. Vol. 1 ¶33; Klarevas County Dec. ¶33. Klarevas's account of this incident is grossly inaccurate, and is not supported by the news article cited in his footnote for that anecdote.

41. The distinction between a pause in shooting due to reloading and a pause due to the gun jamming is crucial because banning LCMs might increase mass shooters' need to reload but it would not increase how often guns jam. The news article on which Klarevas relied (State Dec. Vol. 1 p. 29 n. 35; County Dec. 26 n. 36) makes it clear that—contrary to Klarevas—it was *not* known that the shooter was reloading when he paused in his shooting, and explicitly states that the shooter's

pause in firing may have instead been due to his gun jamming: "It was unclear if the weapon jammed or malfunctioned or the gunman didn't know how to reload" (AP News 2019). This statement is so clear that it is difficult to believe that Klarevas's mischaracterization of this incident was due to an honest misunderstanding. In any case, an accurate account of this shooting would not have supported Klarevas's arguments in favor of banning LCMs.

42. At some points in his report, Klarevas's theory of how unavailability of AWs or LCMs would save lives descend into pure speculation. He guesses that restrictions on AWs or LCMs do not just reduce casualty counts in attacks, but can also "suppress the inclinations of potential mass shooters to go on killing rampages in the first place because their means of choice are unavailable" (p. 29). That is, he is seriously arguing that a person otherwise intent on killing large numbers of people might refrain from committing the crime altogether simply because he could not obtain, say, the 30-round magazine he would have preferred (the "means of choice") and would have to make do with three 10-round magazines instead. His only "evidence" offered in support of this remarkable speculation is the statements of an incarcerated teenaged killer that he would have "killed as many people as I possibly could" had he been able to get an AR-15. *See* Klarevas State Dec. Vol. 1 ¶32; Klarevas County Dec. ¶32. Even leaving aside doubts about the reliability of inmate statements or speculations about hypothetical circumstances, it is still clear this example does not support Klarevas's thesis since this killer did *not* refrain altogether from committing a murder.

43. At other points, Klarevas makes claims plainly inconsistent with known facts and even logic. He insists that use of an LCM increases the number of "bullets a shooter can fire at a target within a finite amount of time." *See* Klarevas State Dec. Vol. 1 ¶35; Klarevas County Dec. ¶35. This

is false. Three fully loaded 10-round magazines of the sort left legally available after LCMs are banned contain exactly the same number of rounds as a fully loaded 30-round magazine of the type prohibited by LCM bans—both would permit the shooter to fire 30 rounds. Therefore, LCM use does *not* affect how many rounds a mass shooter can fire within a finite amount of time. Klarevas is correct that inflicting multiple wounds on a victim increases the likelihood that the victim will die (*id.*) but this is irrelevant to the effect of LCM use on fatality counts in the absence of any evidence that the use of an LCM increases the likelihood of multiple wounds being inflicted in the first place.

44. Klarevas's discussion of the potential effects of rapid fire (¶37) leave out what is the effect most familiar to shooters—rapid fire can be less accurate. That is, a shooter is less likely to wound a victim at whom he aimed if he shoots quickly. Thus, if LCM or AW use really did increase mass shooters' rate of fire, one major result would be that a smaller share of the victims at whom the shooter aimed would be wounded. Consequently, Klarevas is wrong when he claims that "LCMs also facilitate the ability of a shooter to strike a human target with more than one round" due to the purported ability of LCM-using shooters to fire more rapidly, since greater rapidity of fire reduces the likelihood of inflicting *any* wounds on an intended target, never mind multiple wounds.

45. Klarevas is also wrong to assert that LCM use facilitates the ability of an active shooter to fire a large number of rounds at an extremely quick rate without pause. The capacity of a magazine has no effect on how quickly a shooter can fire a gun – this is a function of properties of the gun itself and the ability of the shooter to pull the trigger quickly. A charitable interpretation of Klarevas's claim is that it was just a clumsy way of saying that LCM use reduces the need for reloading, and that he conflated this attribute with rate of fire. There is, however, also no evidence that the

need to reload has any effect on casualty counts. The claim that it does have this effect is based on inaccurate assertions that mass shooters' attacks are disrupted by bystanders who tackle the shooters when they are trying to reload. As previously noted, there are no known mass shootings in the U.S. in the past 25 years in which this clearly happened. Cases in which this was *claimed* to have happened all turn out to be incidents in which the pause in shooting was either known to be due to the gun jamming or witnesses stated that it was possible that the pause was due to jamming.

46. Klarevas also repeats another theory proffered by advocates of LCM bans, arguing that pauses in shooting while the shooter reloads offers prospective victims "a chance to flee, hide, or fight back" (¶38). We can call this speculation the "escape theory." The theory is implausible on its face because it ignores just how little time it takes to change magazines on a semi-automatic firearm—about 2-4 seconds (Kleck 2016; Exhibit 2). No one disputes that prospective victims escape from mass shooters, but the issue relevant to the merits of LCM bans is whether reloading provides enough *additional* time when the shooter is not firing to allow *additional* victims to escape, above and beyond those who would have escaped anyway, independent of the shooter reloading. Klarevas does not address this issue.

47. What Klarevas fails to report is that the 2 to 4 seconds it takes for a magazine change is actually less than the typical time between shots when mass shooters are *not* reloading (Kleck 2016). Thus the periods when mass shooters are reloading do not necessarily constitute *additional* time when the shooters are not firing. Instead, reloading entails a pause in firing that is no longer

than the typical span of time that shooters take between shots anyway, when not reloading (identifying their next victim, closing the distance between themselves and a prospective victim, thinking about their grievances, or doing anything else other than reloading).

48. Even if reloading really did permit additional victims to escape or hide, does this happen in real-world mass shootings often enough to suggest that banning LCMs would save a significant number of lives by allowing additional victims to escape? The extreme paucity of genuinely supportive examples that advocates of LCM bans are able to cite strongly suggests that this scenario almost never occurs. Klarevas was able to identify only 3 incidents that he claimed support the escape theory, and none of these 3 are clearly supportive.

49. His first supposedly supportive example is the 2012 shooting at Sandy Hook Elementary School in Newtown, Connecticut. *See* Klarevas State Dec. Vols. 1 & 2 p. 31 n. 37 & Exhibit U; County Dec. p. 28 n. 38 & Exhibit U. Klarevas insists that "several first-graders escaped their attacker *as he was swapping out magazines* allowing them to exit their classroom and dash to safety" (¶39, emphasis added). This is a mischaracterization of this mass shooting, in which Klarevas distorted the key detail: the shooter was *not* "swapping out magazines" when the children escaped. The sole basis for this version of the event was an unsupported *speculation* about what happened by an unnamed police officer in the Hartford Courant news article (12-23-12) on which Klarevas relied for this point. Months after this article appeared, the same newspaper reported that the pause in shooting was actually due to the shooter struggling with a jam. The article's authors flatly stated that "Lanza had stopped firing because his gun had jammed" (Hartford Courant 10-19-13). Klarevas

was well aware of this later news article, since he cited it on p. 280 of his book, Rampage Nation. Thus, his distortion appears to have been a knowing mischaracterization.

50. Klarevas's second incident that supposedly supports the escape theory was the 2007 Virginia Tech shooting. *See* Klarevas State Dec. Vol. 1 p. 31 n. 38; County Dec. p. 28 n. 39. As support, he cites a 150+ page official report, but without identifying any particular pages where supportive information could be found. I was unable to find anything that indicated that additional victims escaped because the shooter was reloading.

51. Klarevas' third and last example that supposedly supported the escape theory was a shooting that occurred in Thousand Oaks, CA in 2018. *See* Klarevas State Dec. Vol. 1 p. 31 n. 38; County Dec. p. 28 n. 39. The claim that prospective victims escaped while the shooter was reloading was based entirely on the following statement by a single witness: "Once Wennerstrom could tell that the gunman was reloading he and others escaped through a window" (CBS News 12-7-18). The news story did not explain how this man "could tell the gunman was reloading" rather than clearing a jam or pausing to select his next victims. Nothing in the news report indicates that the witness actually saw the shooter reloading, as opposed to guessing that this was happening based on a pause in the shooting. It is especially unlikely that this witness actually saw the shooter reloading, in light of the fact that he was hiding under a pool table when the pause occurred. If the shooter's pause in shooting was not in fact due to reloading, the fact that victims escaped would not provide support for the escape theory. In any case, nothing in this article established that those who escaped during a pause in the shooting would not have escaped, anyway even in the absence of reloading.

52. In sum, Klarevas failed to identify even a single mass shooting that supports the notion that forcing mass shooters to reload more often would allow additional prospective victims to escape or hide.

53. Klarevas then offers another theory of why forcing additional reloads would save lives, arguing that reloading would allow bystanders to tackle or disarm the shooter (¶¶38-39). He insists that "in recent history, there have been *numerous* instances of gunmen being physically confronted by unarmed civilians while reloading, bringing their gun attacks to an abrupt end" (¶39, emphasis added). Notwithstanding his reference to "numerous" instances, he cited only four incidents in which this supposedly occurred, most of which do not actually support Klarevas's claim.

54. His first supposedly supportive incident (¶39) was not an example from "recent history" at all, since it occurred nearly 30 years ago, in 1993. The fact that he had to go back that far into the past to identify supportive cases is itself suggestive how just how rare such cases are.

55. The three other purportedly supportive cases cited by Klarevas (¶39) are more dubious. He claims that bystanders were able to tackle the shooter who tried to kill Rep. Gabrielle Giffords in Tucson in 2012 because the shooter was reloading. In fact, it is not at all clear whether this was what the shooter was doing when he was tackled. Police investigation revealed that the shooter was using a defective magazine in which the spring was broken (New York Times "A Single, Terrifying Moment: Shots, Scuffle, Some Luck," January 10, 2011, p. A1). Thus, the pause in shooting that facilitated bystander intervention may have been due to the shooter struggling with a jam caused by the defective magazine's failure to properly chamber a round, rather than reloading. A

ban on LCMs would not increase defects in magazines, and thus would not increase opportunities for bystander disruption due to such defects.

56. Klarevas's third supposedly supportive example is a shooting that occurred at a Waffle House restaurant in 2018. *See* Klarevas State Dec. Vol. 1 p. 32 n. 40; County Dec. p. 29 n. 40. In the 4-24-18 news article cited by Klarevas, the intervenor, James Shaw, did indeed claim that the shooter was reloading when he tackled him. What Klarevas does not mention is that Shaw later rolled back this claim, conceding that the shooter instead might have been struggling with a jam: "'His gun either jammed or he was trying to reload,' Shaw recalled. 'Not exactly sure, but I saw my opportunity, my window. So I took it.'" (The Tennessean 4-28-18). Thus, as with the Tucson shooting, Klarevas had no sound basis for regarding the Waffle House incident as supportive of his theory that mass shooter reloading results in bystander intervention.

57. The fourth and final example cited by Klarevas (¶39) serves to show just how hard it was for him to identify supportive cases. The 2022 Laguna Woods church attack that he cites was not even a mass shooting, either by the common definition using the criterion of four-or-more dead, or by Klarevas's definition of "high-fatality" shootings as incidents involving 10 or more dead. Only one person was killed, so it was not a mass shooting disrupted by bystanders when the shooter reloaded.

58. In sum, Klarevas was unable to identify even a single mass shooting in the past 25 years in which the shooter was clearly disrupted because he paused to reload. Even if the shooters were in fact reloading in the two mass shootings where it was uncertain what the shooter was doing

when he was tackled (Giffords, Waffle House), it would still be true that disruptions of mass shootings due to shooters reloading are extraordinarily rare. For example, with reference specifically to Illinois, Klarevas did not cite a single such case in the entire history of the state. Legislators in a typical state would have no sound foundation for believing that banning LCMs would save even a single life due to mass shooters being forced to reload more often and consequently being tackled by bystanders during the reload.

59. Regarding so-called "assault weapons" (AWs), Klarevas claims that they cause higher fatality counts than other weapons, though he often lumps together AWs and LCMs as if assertions about one apply to the other (e.g., see ¶14 where he refers to the "greater lethality associated with the use of assault weapons and LCMs"). This effectively allows him to lean on evidence that only supports banning LCMs to advance his case for banning AWs, or vice versa. These are quite distinct categories of objects, since a firearm can be an AW without being equipped with an LCM. Conversely, since LCMs are nearly all detachable, they can be attached to semi-automatic firearms that have not been banned as AWs.

60. Klarevas' report is conspicuously vague on two related points. First if AWs are more lethal, to what other firearms are they being compared? Compared to what guns? Neither Illinois nor any other state has banned possession of all guns or even all semi-automatic guns, so other firearms, including other semi-automatic firearms, remain available even after AWs are banned (see his Exhibit C). Second, leaving aside the separate issue of the impact of LCMs, why are AWs any more likely to cause more deaths than other, unbanned firearms?

61. Klarevas does not deny that other firearms, including other semi-automatic guns, remain legally available after AW bans are enacted, since legal definitions of the AWs that are banned do not encompass all firearms or even all semi-automatic firearms (see his fn. 6 in the State Declaration, fn. 7 in the County Declaration, and Exhibit C). Thus, his claims about the greater dangerousness of AWs must mean that he believes they have properties, beyond the capacity to accept LCMs (which he addresses separately), that make them more dangerous than other types of guns not prohibited under AW bans. He never identifies these properties. He appears to think that the higher fatality counts in attacks with AWs (see his Figure 3) explain themselves.

62. In fact, there is no evidence that AWs are in any sense more dangerous than other, unbanned semi-automatic firearms. Neither Klarevas nor anyone else to my knowledge has shown that the former are capable of *firing any more rapidly* than the latter. Likewise, neither Klarevas nor anyone else to my knowledge has shown that the former are *more accurate* than the latter, i.e. that a shooter is more likely to hit his intended target when using an AW. Likewise, neither Klarevas nor anyone else to my knowledge has shown that a wound inflicted by a banned AW is *more likely to be fatal* than one fired by an unbanned gun. Quite the contrary—guns banned as "assault rifles" most commonly fire smaller caliber bullets such as those of .223 caliber—less than a quarter of an inch across. This compares to 0.354 inch across a bullet fired from the common 9 mm handgun or even bigger bullets fired from civilian-style hunting rifles. Consequently they tend to make narrower wound cavities in the victim's body that are less likely to intersect a vital organ or artery and kill the victim (see sources cited in Kleck 1991, p. 77). Finally, since AW bans do not define AWs as any gun capable of accepting a detachable magazine, this means that unbanned semi-automatic guns can

be just as *capable of accepting a detachable magazine* – including one with a large capacity—as banned AWs.

63. To summarize, banned AWs are no more capable of rapid fire, no more accurate, no more lethal shot-for-shot, and no more capable of accepting LCMs than unbanned semi-automatic firearms. Thus, there is no foundation for believing that any less harm to the victim would be inflicted if an offender used an unbanned counterpart as a substitute for a banned AW.

64. In sum, Klarevas did not establish any plausible mechanisms by which increased re-loading induced by LCM bans would save lives, and did not establish that banned "assault weapons" are any more likely to kill or wound than other semi-automatic firearms not prohibited by AW bans. He nevertheless claims that federal and state bans on LCMs and AWs have somehow saved lives and reduced the incidence of mass shootings. *See* Klarevas State Dec. Vol. 1 p. 27-36; Klarevas County Dec. 24-33. His sole support for this position consists of noting (Table 8 in State Declaration, Table 7 in County Declaration, and accompanying text) that there were fewer "high-fatality" mass shootings when and where LCM and AW bans were in effect—a crude analysis documenting a simple bivariate association.

65. This analysis shares the same fatal flaw as all studies of the impact of gun control laws. Any negative association between violence rates and the presence of gun restrictions is at least partly spurious. That is, even if the restriction is totally ineffective, one is still likely to find less violence in places with the restriction in place simply because populations with more negative attitudes towards violence will (1) have less violence, and (2) be more likely to support and implement measures intended to reduce violence, including gun control laws. Survey evidence shows that people with

more negative attitudes towards violence are also more likely to support gun control laws (Kleck 2022, Exhibit 3). Klarevas did not control for the prevalence of anti-violence attitudes of the residents in different states, and so had no basis for concluding that lower rates of mass shootings in places with LCM/AW bans were caused by those laws.

II. Responses to Declaration of Phil Andrew

66. Former FBI agent Phil Andrew as an expert for both the State and County Defendants offers a series of personal opinions about dangerousness and effects of LCMs and AWs on violence, rather than expert opinions. They are not expert opinions because these scientific, statistical, or otherwise technical claims are not supported by either research or any other reliable kinds of evidence, and in many instances directly contradict what evidence has shown. He makes claims but does not bother to offer any supportive evidence at all, never mind reliable evidence. Much of what he says is also irrelevant to the merits of banning or otherwise restricting LCMs or AWs.

67. It is impossible to decipher the meaning of some of Andrew's opinions because they are stated in such ambiguous or imprecise terms. For example, he opines that AWs and LCMs "have a disproportionate impact on public safety" (¶19). Public safety in what sense? The frequency of accidents? Disease? The incidence of robberies? "Disproportionate" relative to what? Does this refer to a comparison with other firearms? If so, which other firearms? Disproportionate compared to their share of the civilian gun stock? Does the statement apply equally to both AWs and LCMs? Andrew's subsequent discussion does not clarify any of these ambiguities.

68. To the extent that Andrew's opinions can be deciphered, they are mostly inconsistent with extant scientific evidence. As previously noted, AW bans do not prohibit all firearms or even

all semi-automatic firearms, so for a claim that AWs are disproportionately dangerous to be meaningful, it would have to mean that banned AWs are in some way more dangerous than their unbanned counterparts. Andrew, however, never squarely addresses this comparative issue, instead merely noting various ways that some AWs are dangerous (e.g., ¶39). As previously noted in connection with the Klarevas Declaration, Andrew does not present any evidence that banned AWs are more capable of rapid fire, more accurate, more deadly shot-for-shot, or more capable of accepting detachable magazines, including LCMs, than unbanned semiautomatic firearms. In the absence of such evidence, there is no logical foundation for Andrew's opinion that banning LCMs would reduce the harms of firearms violence.

69. Andrew is also confused about exactly what AW bans, in Illinois and elsewhere, actually ban. He devotes page after page to detailing the "killing potential" of 1960s-era AR-15s (¶¶25-34), while evincing no awareness that those particular AR-15s, being capable of full-auto fire like machineguns, were already made illegal by federal legislation decades ago.

70. The guns used in civilian mass shootings that are sometimes misdescribed as "AR-15s" are nothing of the kind, but rather are rifles incapable of full-auto fire that were either derived from true military AR-15s or cosmetically resemble such rifles. They are also guns sometimes vaguely referred to as "AR-15-style" rifles, which could mean nothing more than they look like AR-15s. Similarly, reporters will often misdescribe mass shooters' weapons as "AK-47s" (guns capable of full-auto fire), when the weapons in question were not actually AK-47s but rather guns incapable of full-auto fire that cosmetically resemble AK-47s (an example can be found in the El Paso article

cited in Andrew's fn. 37). Cosmetic resemblance to dangerous firearms does not make a firearm dangerous.

71. Andrews does not cite any evidence that the dangerousness of these civilian weapons is equal to the dangerousness of the true AR-15s that he discusses at such great length (¶¶25-34). Likewise he does not establish that all, most, or even a large minority of the firearms prohibited by AW bans are AR-15-style weapons. Consequently his extensive discussion of military AR-15s capable of automatic fire (¶¶25-34) has no known relevance to the merits of banning the wide array of firearms defined as AWs in contemporary legislation.

72. Andrew's opinion that the military origin of the AR-15 is stressed in marketing to the public (¶37) is likewise utterly irrelevant to the dangerousness of the firearms defined as AWs in laws banning AWs or to the violence-reduction value of banning on AWs.

73. Andrew claims to know the percentage of "firearms in private possession in the United States" that are "assault weapons" (¶36), but his only support (fn. 30) is a report that did not concern assault weapons. To my knowledge there are no data that would allow one to know this percentage. Since this percentage is unknown, it is not possible to determine if the "assault weapon" share of guns used in mass shootings or any other crimes is disproportionately large.

74. Andrew alludes to "the dominant use of assault weapons by perpetrators of mass shootings" (¶37) but does not provide or cite any supportive evidence.

75. Andrew claims that "domestic terrorists, extremists and private militias" are "often attracted to" assault weapons, but does not provide or cite any evidence concerning frequency or

ownership of such weapons by such persons. His only purportedly supportive evidence is two isolated examples of violence of this type and the unsupported opinions of two government officials (fn. 34).

76. Andrew professes to know the motives of the "perpetrators of targeted violence" in arming themselves with "assault weapons" (¶39; see also ¶¶41-42 and fn. 39), without any evidence bearing on the motives of these perpetrators. He then lists properties of "assault weapons" that he speculates are attractive to these perpetrators, without identifying which particular firearms have these attributes. He evinces no awareness that the properties he attributes to banned AWs also characterize unbanned semi-automatic firearms, implying that substitution of the latter for the former would result in no change in the frequency or seriousness of firearms violence.

77. Andrew alleges that LCMs "increase the lethality of such weapons" because the shooter can fire more rounds before reloading (¶40, repeated in ¶50), but offers no explanation of why this would affect the frequency or seriousness of violence. As previously noted, (1) a mass shooter's need to reload has not resulted in a single clear case of bystanders tackling a shooter while reloading in the U.S. in the past 25 years, and (2) there are no known cases of 3-4 second reloads of detachable magazines resulting in additional prospective victims escaping or hiding (see also Kleck 2016).

78. Andrew offers wildly speculative, unsupported claims about the goals of "mass murderers," opining that "they want to kill or maim as many people as possible in as short a time as possible" (fn. 39). Nothing in the reports he offers in support bear on the goals of mass murderers, and evidence on what perpetrators actually do in mass shootings directly contradicts any opinion

that they want to carry out their attacks "in as short a time as possible." Quite the contrary—mass shooters typically fire at slow rates, well below the rates of fire of which their weapons are capable (Kleck 2016, pp. 42-44). Mass shooters do not need, or use, rapid-fire capabilities in the firearms they use to carry out their attacks, so Andrew's repeated references to the rapid fire capabilities of AWs (e.g., ¶31, ¶33, ¶41) are irrelevant to whether AWs are especially suitable for carrying out mass shootings.

79. Andrew notes that AWs are accurate at ranges beyond 100 yards, and makes the more dubious claim that mass shooters can fire accurately at this range "with little skill development." He asserts that this long-range accuracy "increases the perimeter that responders must secure and the area in which potential victims are at risk" (¶41). There are two problems with this opinion. First, Andrew does not offer any examples of mass shooters who killed or wounded anyone at this range, and thereby establish that this is a serious problem. Second, Andrew seems unaware that most of the "assault weapons" used in mass shootings are semi-automatic *handguns*, not the rifles he apparently had in mind. Handguns are not accurate at such ranges, and I am not aware of any evidence that mass shooters use handguns to shoot, or try to shoot, victims at long range.

80. Andrew offers the novel argument that an "assault weapon" can be used to kill with the shooter obtaining little training, and that this "significantly limits pre-incident intervention opportunities that could happen during a training and preparation phase of an attack" (¶42). There are at least two problems with this speculation. First, he offers no evidence that effective use of AWs requires less training than use of other firearms. It is simply an unsupported assumption. Second, he offers no evidence that there has ever been even a single "intervention" into the efforts of a

would-be mass shooter during firearms training, and thus provides no empirical support for the notion that the purportedly lower level of training needed to use AWs reduces opportunities for "pre-incident intervention."

81. He also falsely claims that one untrained mass shooter used "two AR-15 weapons" to shoot many people in Uvalde, Texas (¶42). To the extent Andrew means to suggest that the Uvalde mass shooter used AR-15s capable of full-auto fire (and thus illegal to sell) like those discussed earlier in his declaration (¶¶25-34), that is incorrect. According to the source on which Andrew relied (fn. 40), the guns used in this shooting were legally purchased "AR platform rifles"—*not* fully automatic AR-15s like those discussed on the earlier pages of his declaration.

82. Andrews opines that "mass shooting attacks *with assault weapons* are particularly physically and emotionally traumatic" (¶43, emphasis added). His sole support for this opinion is a single article that did not provide any evidence whatsoever comparing mass shootings involving AWs with those involving other types of firearms. I am not aware of any evidence that supports Andrew's claim that a mass shooting with one type weapon versus another would be more traumatic.

83. Nor is there any evidence that wounds inflicted by military-style rifles of the sort Andrew labels "assault rifles" are any more likely to be fatal than wounds inflicted by civilian-style rifles of the sort commonly used for hunting. Quite the contrary. Wound ballistics research indicates that military-style rifles generally fire smaller caliber pointed bullets that do not expand after hitting the victim's body, and that consequently create narrower wound cavities, less likely to intersect vital organs and produce death (see sources cited in Kleck 1991, p. 77).

84. Andrew notes that mass shooting can cause "long-lasting traumatic impacts on survivors" (¶44) but does not offer even a speculative explanation of why this would be any more true of incidents involving AWs than those involving other types of guns. Neither of his sources offered as support (fn. 42, 43) provide any relevant information on this comparison.

85. Andrew opines that mass shootings "can have tremendous negative economic effects on communities affected by them" (¶45) but does not explain why mass shootings involving other types of guns (or non-gun methods such as arson or bombings) would have any less detrimental economic effects. And since he does not establish that AW availability affects the frequency or seriousness of mass shootings, these economic costs have no logical bearing on the merits of efforts to reduce AW availability.

86. Andrew claims that "mitigating the threat of an active shooter incident is the *top priority* for law enforcement" (¶46, emphasis added). It bears emphasizing that he was not merely asserting that this *should be* law enforcement's top priority, but rather that it already is. He offers no supportive evidence for this remarkable claim. Given that mass shootings account for less than one percent of murder victims, making this *the* top priority, with all this implies for the diversion of law enforcement resources from other policing tasks including other more common instances of violence, would seem especially ill-advised.

87. Andrew claims that availability of AWs, especially what he calls "assault rifles," place law enforcement officers at special risk in responding to mass shooting incidents because bullets from these weapons can penetrate police body armor (¶¶49, 52). One would think that Andrew would support this opinion by citing the large number of law enforcement officers killed or injured

in mass shooting incidents when bullets penetrated their body armor. He does not cite a single example of this ever happening in the entire history of the U.S. Official national data from the FBI indicates that from 2010 through 2019 there were only 21 law enforcement officers killed due to a bullet penetrating their body armor, *none* of them in connection with intervention in a mass shooting, out of over 600,000 sworn officers (FBI 2022). The risk of a law enforcement officer being killed because a bullet fired from an AW penetrated his body armor is extremely low by any reasonable standard, and the risk of this happening in connection with intervention in a mass shooting, which as discussed is itself an exceedingly rare event, is close to nonexistent. Andrew also fails to note that officers would be at risk at least as high if mass shooters instead used civilian-style rifles and ammunition of the sort used for hunting.

88. Andrew repeats this false claim, asserting that "law enforcement officers are increasingly aware of the higher rate of deaths and injuries of officers due to assault weapons" (¶57). He has no evidence bearing on what law enforcement officers in general are aware of, and available evidence does not support a belief that AWs cause a higher rate of deaths and injuries to officers.

89. Andrew cites isolated cases in which law enforcement have been attacked with "assault weapons" (¶54), but not offer any evidence that any of these attacks were facilitated or made worse by the attributes that Andrew attributes to AWs. For example, he does not indicate that any of them required rapid fire or even involved large numbers of rounds being fired. His discussion is therefore irrelevant to the costs or benefits of restricting AWs.

90. Andrew excuses the incompetent response of law enforcement to the Uvalde Texas school shooting by hinting that their delay in taking decisive action was due to their belief that they

might be "out-gunned" by the shooter (¶59). It was not in fact the case that officers were outgunned, and Andrew offers no evidence that this was why they delayed any effort to stop the shooter. News accounts indicate instead that the delay was due to poor training, officers' unwillingness to act without orders from superiors, and poor command-and-control by those superiors, especially the incident commander (e.g., Austin American-Statesman 5-27-22). There is no evidence that the disastrous response was in any way affected by what kinds of firearms the police thought the offender had.

91. Andrew opines that AW bans do not interfere with citizens' ability to defend themselves, but offers no evidence actually bearing on this issue. Instead, he asks the reader to somehow take on faith that his "experience as a federal agent" (¶58) etc. allows him to draw reliable conclusions on this matter. There is no evidence in his report that he has ever even read an empirical study of what actually happens in crimes in which victims use guns defensively. He claims that the most suitable firearms for self-defense are shotguns and 9 mm pistols (¶61), but offers no reasoning for this assertion and cites no evidence comparing the defensive merits of such guns with other guns. He also seems oblivious to the fact that guns or magazines prohibited under the bans *include* shotguns and 9 mm pistols, or the magazines that come standard with some such handguns. Contrary to his opinion that the laws would "not interfere with law-abiding citizens' ability to defend themselves," the laws would ban some of the very guns he recommends as suitable for self-defense, or prohibit law-abiding citizens from using the magazines that came with those guns.

92. Andrew appears to assume that AW bans only restrict types of firearms, when many of them actually ban LCMs as well, since none of his discussion addresses LCMs or the possibility

that some lawful defenders might need magazines holding more than 10 rounds to stop attacks by multiple offenders.

III. Responses to Declaration of Randolph Roth

93. Broadly speaking, Roth's declaration for the State Defendants offers an historical overview of American violence and early firearms. I respond to that report to clarify that these descriptions have no bearing on the causal effect on violence of different kinds of firearms or restrictions on firearms. His historical methods do not allow him to draw meaningful conclusions about causation, and it is causation that is relevant to the likely consequences of bans on AWs or LCMs. Does use of AWs or LCMs cause more violence? Do bans on AWs or LCMs cause less violence? Roth's methods do not allow him to draw meaningful conclusions on these causal questions, and his report displays near-total ignorance of contemporary research that does permit stronger conclusions about causal effects. Consequently, his conclusions on these questions amount to little more than guesswork. My comments are therefore confined to those pertaining to pp. 35-44 of the report.

94. The most salient characteristic of these pages is their disconnection from serious empirical information. Roth makes claims and draws conclusions based on anecdotes pertaining to isolated instances. For example, he suggests that availability of the full-auto Thompson submachinegun became a significant national problem in the 1920s (¶46), but the only relevant evidence he cites is the occurrence of two isolated gangland slayings in which that gun was used. He cites no evidence that even 1% of homicides in the U.S., in that period or any other period, involved either that specific firearm or any other full-auto gun.

95. Similarly, he states that "in recent decades, criminal organizations, terrorists, and lone gunmen with an intent to commit mass murder have also discovered the effectiveness of rapid-fire semiautomatic weapons with large capacity magazines" (¶49), but without citing any supportive evidence on the frequency of the use of these weapons by such parties. He does not state what he means by "effectiveness" or explain why either rapid-fire capability or LCMs are necessary or even useful for carrying out the violent acts these parties commit. His later text does not provide any further clarification.

96. He makes no distinction between potential capabilities of firearms and those that are actually used in real-world violent incidents. Thus, he devotes considerable text to establishing that AWs can fire very rapidly and "can inflict mass casualties in a matter of seconds" (¶51), but appears unaware that actual instances of mass shootings in the U.S. are not in fact committed in "a matter of seconds." Mass shootings instead typically involve slow, deliberate fire. Shooters fire their guns at a pace far slower than the rate of which they are technically capable (Kleck 2016). That is the guns have "excess" rate-of-fire that is surplus or unused. Thus, the very high rate-of-fire capabilities that Roth belabors at length (pp. 37-39) are utterly irrelevant to actual U.S. violence, even to the mass shooting incidents to which they are purportedly most relevant.

97. Roth likewise appears to believe that the high muzzle velocity of "assault rifles" increases their deadliness. He evinces no knowledge of wound ballistics research that indicates that (1) smaller caliber bullets like those typically used in "assault rifles" cause narrower wound cavities in victims, and (2) higher muzzle velocities such as the c. 3000 fps cited by Roth cause bullets to pass though the victim's body too fast for the bullets to expand. Thus, they remain no wider when

they exit the body than when they entered. This too contributes to a narrower wound cavity, which reduces the chances that a vital organ or artery will be damaged (see sources cited in Kleck 1991, p. 77). Consequently, Roth is wrong to assume that higher muzzle velocity always makes guns or ammunition more lethal.

98. Roth documents (pp. 39-41 & Figures 1-3) the simple bivariate association between mass shooting fatality counts and use of semiautomatic guns or "extended" magazines (i.e. LCMs), and then makes the beginner's mistake of confusing correlation with causation. His conclusions that restrictions on AWs or LCMs will cause a reduction in deaths only makes sense if he believes that use of AWs or LCMs *cause* more deaths—even if he is too cagey to explicitly state this claim. A conclusion of causal effects, however, cannot be justified solely on the basis of a crude bivariate association. As previously noted, more lethal intentions of an aggressor will (1) cause more lethal outcomes (more fatalities), but also (2) make it more likely the aggressor will acquire the tools (such as semiautomatic firearms or LCMs) that he believes (correctly or not) will help him bring about those lethal outcomes. Thus, one would expect to find the bivariate association Roth notes even if use of semiautomatic firearms or LCMs had no effect whatsoever on the number of deaths in mass shootings. Roth does nothing to control for the lethality of mass shooters' intentions and thus has no foundation for interpreting his simple bivariate associations as anything more than spurious (non-causal) associations.

99. Finally, Roth makes an incoherent argument in footnote 126, in which he addresses my published remarks about the Gabrielle Giffords shooting in Tucson in 2011. I noted that by-standers tackled the shooter during a pause in his shooting and thereby ended his attack, but that it

was unclear whether this pause occurred because the shooter was reloading or because he was struggling with a jam due to a malfunctioning magazine. Roth correctly states that I argued that any disruption in a mass shooting due to a pause that did *not* involve an attempt to reload does not help support the case for limiting magazine capacity. He then makes the *non sequitur* comment that "*if unarmed bystanders did not stop the Tucson shooting*, then no one stands a chance in the face of that kind of firepower." This comment makes no sense because I explicitly stated that unarmed bystanders clearly *did* stop the Tucson shooting. Roth is addressing a straw man. He neglects to address the unfortunate reality that it is extremely rare that bystanders as brave as those in Tucson stop mass shooters as those did. Roth does not share with readers the fact that the Tucson incident appears to be the *only* mass shooting in the past quarter of a century that was clearly stopped when bystanders tackled the shooter during a reload attempt, a fact that undercuts the notion that inducing more reloads by bans on LCMs would lead to more bystander disruptions of mass shootings.

IV. Responses to Declaration of John J. Donohue

100. I respond to opinions from the County Defendant's expert, Donohue, regarding the effects of the use of AWs and LCMs on violence, and the effects of AW/LCM bans. As for Donohue's false claim that "an abundant empirical research has confirmed" that passing right-to-carry laws increases violent crime, most research finds no net effect of these laws on violent crime, including some of Donohue's own research.

101. Donohue states that he intends to discuss the "growing problem of public mass shootings" (p. 13) but does not explain why he chose to limit his attention only to mass shootings in public places. He was certainly aware that only a small minority of mass shootings occur in public

places, since this fact is documented in the Congressional Research Service report he cites on p. 14. Thus, he knew that the incidents occurring in public locations are not worthy of special attention because they claim a large share of mass shootings—they do not. The possible actual reason becomes evident later, when Donohue states that a large share of mass shootings involve the use of LCMs. This is only true of the minority occurring in public places.

102. Donohue appears to confuse mass shootings with "active shooter incidents" (ASI), since he makes claims about the former, but then cites data about the latter as if it is the same thing. It is not. Although mass shootings are defined in a number of ways, the definitions are all based on large numbers of victims being wounded, either fatally or nonfatally. An ASI, in contrast, does not necessarily involve anyone being killed or wounded. Further, while the definition of mass shootings is based on a very objectively determinable criterion (number of wounded victims), the definition of active shooter incidents is dependent on a highly subjective factor – the opinion of one or more law enforcement officers that an armed suspect was intending to use a gun to hurt people, even if the suspect never actually does so (see the source cited in Donohue's fn. 19). As a result of this subjectivity, increases in counts of ASIs reported can be largely a result of increased police sensitivity to the possibility of a mass shooting occurring. Thus the trends in active shooter incidents to which Donohue pays so much attention (pp. 14-16) cannot be relied upon to judge trends in the frequency of mass shootings.

103. Data that actually measure the frequency of mass shootings themselves do not show the pronounced upward trend between 2014 and 2022 indicated by Donohue's Figure 5 concerning ASIs (p. 16). My Table 2 herein reflects comprehensive counts of all mass shootings with 4 or more

fatalities, and indicates only slight erratic fluctuations in the past decade, around an average of about 22 mass shootings per year. A focus on ASIs gives readers a false impression of trends in mass shootings.

104. Donohue asserts that AWs pose special dangers to police because their high muzzle velocities make them capable of penetrating police body armor. He does not cite any data on how often this occurs, perhaps because the most authoritative information we have indicates that this virtually never happens. In the most recent 10-year period for which we have data, the average number of police officers killed per year in the entire nation as a result of bullets penetrating their body was 2.1 (21 over the ten-year period), in a nation with over 600,000 sworn officers. And only some of these were inflicted with AWs. Over this period a total of 511 officers were feloniously killed by all weapons, so at most 4.9% of officer killings (21/511=0.049) could be attributed to the purported vest-penetrating power of AWs (FBI 2022, Tables 1, 39).

105. Donohue discusses a 2018 study (p. 18) that confirmed an unsurprising half-century old finding—that wounds inflicted with larger caliber bullets are more likely to produce death. It is unsurprising that bigger bullets produce bigger holes in victims, but Donohue misunderstands the significance of this finding for restrictions on AWs. The so-called "assault rifles" that are prohibited under most AW bans typically fire *smaller* caliber bullets, and thus are, by Donohue's own reasoning, *less* likely to produce a death than civilian-style rifles of the sort used in hunting. As a point of comparison, the width of the old-fashioned .38 revolver that used to be the most common kind of crime gun is (notwithstanding its .38 name) 0.357 inches across. The most common calibers among bullets that killed police officers via vest penetration (which Donohue thinks commonly involved

AWs) were 7.62 mm (0.300 inch across), 0.223 caliber (0.22 inches across), and 5.45 mm (0.215 inch across) (FBI 2022, Table 39). In sum, fatter bullets do indeed create bigger holes in victims, but "assault rifles" generally fire narrower bullets.

106. As to AW handguns, Donohue's own data (p. 18) indicate that the calibers of many semi-automatic pistols commonly banned under AW bans (.22, .25. .32, .380) are less lethal than calibers common among (unbanned) revolvers of .38 or .357 caliber, while 9 mm, the caliber of the most commonly banned models of semi-automatic pistols, are only of medium lethality.

107. Donohue's only evidence that supports his belief that AWs are more dangerous than other kinds of firearms is the bivariate association of higher fatality counts of crimes (such as mass shootings) with AW use (p. 19). This, however, is merely one possible *result* of greater lethality, not itself a cause or explanation of greater lethality. Donohue clearly believes that AWs are in some sense more lethal than other guns (e.g., see his reference to "greater lethality" p. 19), but never establishes any credible explanation for why this is so.

108. Although he vaguely alludes to their "greater lethality" he does not cite any evidence that a given round fired from an AW is any more likely to be fatal than a round fired from a non-AW gun. Likewise he does not claim that the mechanism by which the gun loads cartridges into firing position has any effect on their lethality. He does not assert that possession or use of LCMs allows a shooter to bring more total rounds into a crime than possession of use of smaller magazines—three fully loaded 10-round magazines would provide just as many rounds as a single fully loaded 30-round magazine.

109. Certainly one cannot reasonably expect that AW rounds are more lethal because they are usually bigger than rounds fired from non-AW guns, since bullets fired by AWs as a whole are *not* bigger than bullets fired from non-AW guns.

110. Likewise, Donohue does not cite any evidence that AWs as a whole are more accurate than non-AW guns as a whole and thus more likely to inflict a wound on an intended victim. I am not aware of any such evidence about relative accuracy for whole categories of firearms, which is unsurprising given that accuracy will depend on the particular user and his or her particular proficiency for the particular firearm.

111. Donohue does appear to believe that AWs fire more rapidly than non-AWs, but as previously noted herein, (1) there actually is no documented difference in the maximum potential rate of fire of semi-automatic firearms defined as AWs and semi-automatic firearms not so defined, and (2) this does not matter to violent crime anyway because high rates of fire are neither needed or actually used to carry out their crimes by any significant number of criminals—even those who commit mass shootings with many rounds fired (Kleck 2016).

112. If AWs are not more lethal shot for shot, no more accurate, and no more capable of rapid fire than non-AW semi-automatic firearms, what basis is there for Donohue to conclude that AWs are in some sense "more lethal"? The only remaining attribute of AWs that might explain this purported difference in what Donohue loosely refers to as "lethality" is that some AWs are sometimes used with LCMs. This is really a separate issue, since a given AW may or may not be equipped with an LCM, just as some handguns may or may not be equipped with an LCM as defined by the County's ordinances.

113. Donohue alludes to the "enhanced lethality of high-capacity magazines" (pp. 13, 38) but offers no explanation as to why exactly LCMs "enhance" lethality. He appears to believe that higher casualty counts in mass shootings with LCM involvement is sufficient to establish their greater lethality. It is not, since (as previously explained) both higher casualty counts and the decision to obtain and use LCMs may both be products of the attacker's more lethal intentions. That is, shooters who want to hurt more people are more likely to end up doing so, but are also more likely to use LCMs because they believe, correctly or not, that LCMs are essential or useful for hurting many people. Thus, the association Donohue stresses may simply be a spurious correlation. This is an especially likely interpretation of this bivariate association if there is no known mechanism by which LCM use would increase casualty counts in mass shootings.

114. Close examination of the details of mass shootings indicates that the mechanisms proposed by advocates of LCM bans, including Donohue (see his p. 56), are implausible. These proposed mechanism revolve around the idea that limits on magazine capacity would induce more frequent magazine changes by mass shooters, and this would in turn produce two benefits: (1) more disruptions of shootings by bystanders who tackled the shooter while he was reloading, and (2) additional victims would escape during pauses to reload. Both speculations are uncritically endorsed by Donohue, who repeats (p. 55) the same false accounts of incidents purportedly supporting them that were discussed earlier in this report. The first possibility is implausible simply because bystander intervention during a reload is virtually nonexistent – it may not have occurred even once in the entire nation in the past 25 years. Donohue falsely claims that a mass shooter in a Nashville Waffle House was stopped by a customer "when [the shooter] was trying to reload his rifle" (p. 56). As

noted earlier in this report, the customer in question later rolled back this claim and admitted that he did not know if the shooter was reloading or dealing with a jammed gun at the time he intervened.

115. The second possibility is also implausible because changing a detachable magazine takes only 2 to 4 seconds, and this is actually shorter than the typical interval between shots even when a mass shooter is *not* changing magazines (Kleck 2016). In sum, the use of LCMs that sometimes accompanies AW use by mass shooters also would not make attacks with AWs "more lethal" in any sense.

116. In the absence of any reason to expect that AW or LCM availability or use would increase the frequency or seriousness of mass shootings, Donohue nevertheless insists that AW bans somehow reduce mass shootings (p. 35). One supposedly supportive piece of evidence on which he relies is the increase in the frequency of mass shootings that occurred after the federal AW ban lapsed in 2004. There were innumerable other things changing in that period, many of which might have increased mass shootings, so seizing upon the absence of the AW ban as a factor is arbitrary, to say the least. If the sunsetting of the AW ban really were responsible for the mass shooting increase, a careful analyst should have been able to show that it was *specifically mass shootings that involved guns previously prohibited by the federal AW ban* that increased. No analyst has shown this to be so, and certainly neither the study by Klarevas cited by Donohue (pp. 29-31) nor Donohue's own slight extension of that study showed that the mass shooting increase was either limited to, or greater, among massacres in which previously banned models of firearms were used. (Notwithstanding

Donohue's misleading description of his study on p. 34, he did not establish that it was mass shootings involving *the specific models of guns banned under the federal AW ban* that increased the most in the post-2004 period.)

117. It is also worth noting that Donohue's (and Klarevas's) conclusion, based on their crude bivariate analysis of mass shooting trends, that the federal AW was effective contradicts the most comprehensive and wide-ranging evaluation of that law. That federally sponsored evaluation, conducted by a researcher who was clearly sympathetic towards the ban, concluded that there was "no discernible reduction in the lethality and injuriousness of gun violence" during the time the ban was in effect (Koper 2004, p. 96). The primitive analyses conducted by Donohue and Klarevas provide no sound basis for reversing that assessment. Whatever factors may turn out to be responsible for the rise in mass shootings and their victim counts in the 2005-2014 period (Donohue's Figure 9), the absence of an ineffective AW ban is among the least likely. If the presence of the AW ban did not reduce violence, it is plainly illogical to expect that its absence would increase violence.

118. Donohue asserts that the rise in mass shooting after the 1980s was at least partly due to the increasing availability of what he loosely refers to as "assault weapons" (e.g., ¶85). The key attribute that makes some firearms AWs is that they are semi-automatic (otherwise known as auto-loading). This means that each firing of the gun automatically causes another round to be fed into the firing chamber and (usually) that the hammer is pulled back, making the gun quickly available for the next shot. Nearly all the guns prohibited under either the federal AW ban or state AW bans are semi-automatic. Typically, to qualify as an AW the gun must also have some minimum number (usually two) of "military-style" features, such as flash suppressors, bayonet lugs, etc. These features

are more cosmetic than functionally related to civilian criminal violence—they make the guns look more military, but have no empirically documented utility for committing crimes. It is the semi-automatic functioning of these guns that might be relevant to crime.

119. Donohue's discussion of historical trends (e.g., pp. 37-39) hints that the rise in mass shootings coincided with the rise in the popularity of AWs. It did not. The rise in the popularity of semiautomatic firearms began decades before the post-2000 rise in mass shootings. This can be inferred from ATF data on trends in the share of handguns sold in the U.S. that were semiautomatic pistols rather than revolvers (no corresponding data are available for rifles or shotguns). Table 3 displays the trend from 1973 (the earliest year available) to 2018 (the latest year available).

Table 3. Trends in the Percent of Handguns Manufactured in the U.S. that Were Semiautomatic Pistols

Year	% Semiauto
1973	27.8%
1975	24.2%
1980	33.0%
1985	45.6%
1990	74.6%
1995	69.0%
2000	75.1%
2005	74.6%
2010	80.1%
2015	80.0%
2018	85.4%

Source: Bureau of Alcohol, Tobacco, Firearms, and Explosives. Firearms Commerce in the United States: Annual Statistical Update.

120. The Table 3 data indicate the rise in the popularity of semiauto handguns began in the late 1970s, accelerated in the 1980s, and continued through 2018. Thus, the beginning of the increased popularity of semiauto guns in the U.S. did not even approximately correspond with the start of the increase in the frequency of mass shootings. During the period from 1975 to 2000 there was a dramatic increase in the popularity of semiauto guns, but no increase at all in the frequency of mass shootings. For example the number of mass shootings involving 6 or more fatalities was 2 in 1975, 0 in 1980, 0 in 1985,1in 1990, 0 in 1995, and 2 in 2000 (Klarevas 2016, p. 83).

121. Donohue's state-level panel study of the impact of AW/LCM bans shares the same flaws as other statistical evaluations of the impact of gun control laws. As noted previously in this report (see Exhibit 3), negative associations between the presence of a gun control law and violence rates are at least partly spurious, due to the impact of anti-violence attitudes on both variables. The more people have negative attitudes toward violence, the less violence they will commit. It is also true, however, that the more anti-violent a person's attitudes are, the more likely they are to support gun control and other measures intended to reduce violence (Kleck 2022; Exhibit 3). This will generate a negative association between the presence of gun laws (such as AW bans) and violence rates, even if the gun laws have no effect on violence. Donohue does not control for the level or prevalence of anti-violence attitudes of states' residents, so he has no basis for interpreting his negative association as reflecting a causal effect.

122. Further, the small number of variables that he does control for are an arbitrary and unsystematic miscellany of variables that do not help isolate the effect of AW bans on the incidence of mass shootings (see his fn. 72). The only kinds of control variables that help isolate any impact

of AW bans are confounders – in this case, variables that affect crime rates and that are also correlated with the presence of AW bans. Donohue does not show that *any* of his control variables are confounders. He fails to report whether any of them are significantly related to mass shooting rates. In a 71-page report he claims that he needed to omit the coefficients on the control variables "to conserve space" (his Table 2, Notes). Likewise, he does not show that any of them are correlated with the presence of AW bans. Thus, there is no basis for believing that Donohue controlled for even a single confounder. He could scarcely have done a worse job in selecting control variables. Consequently there is no scientifically credible basis for believing the his methods isolated any effect of AW or LCM bans. The exact same fatal flaws afflict even more seriously the amateurish study cited in Donohue's footnote 78, so its findings cannot be regarded as credible confirmation of Donohue's results.

123. Donohue claims that "gun control dramatically reduced mass shooting in Australia" but there is no serious evidence that this is true. Certainly advocates of the gun control measures in question have *claimed* that drops in the number of mass shootings were due to implementation of the measures, but their own data did not establish that post-gun ban declines in mass shootings were anything other than a return to Australia's very low pre-ban frequency of mass shootings (a more extensive discussion can be found in Kleck 2018b, included in Exhibit 4). Here is what advocates' own data actually indicated about the impact of Australia's National Firearms Act (NFA):

1. The NFA did not reduce the prevalence of gun ownership in Australia.

2. The NFA only temporarily reduced the total number of guns in civilian hands; within 20 years imports of new guns cancelled out the subtractions from the gun stock produced by buybacks and gun destruction programs.
3. The NFA did not reduce Australia's homicide rate.
4. The NFA did not reduce Australia's suicide rate.
5. The NFA appears to have *increased* the rate of fatal gun accidents.
6. There is no strong evidence that the NFA reduced mass shootings in Australia. The post-ban declines were much smaller than advocates claimed. Such crimes were extremely rare even before implementation of the NFA, and were unlikely to become common even if the NFA had never been implemented.

124. Finally, Donohue asserts that uses of AWs and LCMs for self-defense are extremely rare (p. 49). This is misleading because he does not answer the question "compared to what?" The appropriate cost-benefit comparison would be between (1) the number of defensive uses of these devices compared with (2) the number of times their use did some harm, like increasing the number of deaths in a mass shooting. Since the latter number in most years is zero, it does not take many defensive uses of LCMs and AWs to outnumber the harmful uses.

125. Even the most conservative estimates of defensive uses of the devices indicate they are not zero, which is sufficient to establish that they are more common than harmful uses. In a report prepared as a defense witness in *Oregon Firearms Federation Inc. v. Brown*, Lucy Allen addressed the likely frequency of LCM use in DGUs. (Defendants' expert Yurgealitis has relied on Allen's analysis here. *See* Yurgealitis County Dec. pp. 7-8.) Allen estimated that 0.3% of DGUs involved

over 10 rounds fired, concluding the LCM use was rare. Certainly as a fraction of DGUs it is low. There are, however, a huge number of DGUs each year in the U.S. At least 21 professionally conducted national surveys that have specifically asked about DGUs have estimated anywhere from 0.5-3.5 million DGUs per year, averaging about 2.2 million DGUs a year (Kleck 2021). (Gun control advocates have speculated that these surveys overestimate the frequency of DGUs, but nearly all known sources of error in surveys tend to contribute to *under*estimation - Kleck 2018a).

126. If 0.3% of DGUs involved over 10 rounds fired, this would imply there are about 6,600 such DGUs per year (0.003x2,200,000=6,600). Thus, the percentage of DGUs in which over 10 rounds were fired does not have to be very large for it to imply a number of DGU incidents with many rounds fired that is many times larger than the number of mass shootings with LCM use (about 3 per year), or crimes in which LCM use increased the harm inflicted on victims (zero in a typical year). In sum, the number of defensive uses of guns in which over 10 rounds were fired is far larger than the number of mass shootings in which it could be credibly argued that LCM use increased the number of casualties.

127. The rest of Donohue's report is a compilation of speculations, anecdotes, evidence-free opinions, and a variety of claims that are unrelated to the merits of AW or LCM bans.

V. Responses to Declaration of Jillian Peterson

128. The County Defendants' Declaration by Peterson is largely composed of repetitions of the same erroneous claims, speculations, unsupported opinions, and irrelevant content found in the Klarevas and Donohue Declarations.

129. For example, she opines that assault weapons are disproportionately used in mass shootings. It is impossible the know whether the share of guns used in mass shootings are disproportionately large compared to the share of guns owned or recently acquired by the U.S. population as a whole for the simple reason that the latter is unknown. Available data sources do not provide sufficient detail about the features of guns to know either how many mass shooters' guns are AWs or how many of the guns in the general U.S. civilian gun stock are AWs. Peterson claims (Table 1) that 62 out of 388 firearms (16%) used in public mass shootings were AWs, but has no evidence to refute the possibility that this large a share of *all* U.S. guns are also AWs.

130. Peterson states (p. 15), as many others have, that mass shootings that involve assault weapons have more death and injuries than those involving other guns. She does not, however, do anything to establish that assault weapon use *causes* the higher number of deaths and injuries. If this crude bivariate association is not causal in nature, then there is no logical basis for expecting that reducing AW use (e.g., through a legal ban on AWs) will cause a reduction in mass shooting deaths and injuries. As previously explained in this report, we would expect this bivariate association to exist even if AW cause had no causal effect whatsoever on the number of deaths and injuries.

131. Peterson states the uncontroversial view that mass shootings cause great psychological harm to survivors (p. 17), but offers no reason why mass shootings committed with AWs would cause any more psychological harm that mass shootings committed with other kinds of guns likely to be substituted in the absence of AWs. This same observation applies to her discussion of the effects of mass shootings on the broader community (p. 17).

132. Likewise, nothing in her report establishes that greater availability or use of AWs causes more mass shootings to occur.

133. Peterson concludes with the opinion that the harms of mass shootings could be reduced by AW bans. This is a *non sequitur* conclusion since nothing in her report established either that (1) availability or use of AWs causes more harm, such as that resulting from mass shootings, than would be caused by the availability or use of the other kinds of guns likely to be substituted for AWs, or that (2) AW bans reduce these harms.

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

Executed: March 10, 2023

Gary Kleck

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Exhibit 1

CURRICULUM VITAE

GARY KLECK

(Updated February 27, 2023)

PERSONAL

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CURRENT POSITION

David J. Bordua Emeritus Professor of Criminology, Florida State University

COURTESY APPOINTMENT

Courtesy Professor, College of Law, Florida State University

PROFESSIONAL MEMBERSHIPS

American Society of Criminology

Academy of Criminal Justice Sciences

EDUCATION

A.B. 1973 - University of Illinois, with High Honors and with Distinction in Sociology

A.M. 1975 - University of Illinois at Urbana, in Sociology

Ph.D. 1979 - University of Illinois at Urbana, in Sociology

ACADEMIC HONORS

National Merit Scholar, 1969

Freshman James Scholar, University of Illinois, 1969

Graduated from University of Illinois with High Honors and with Distinction in Sociology, 1973

University of Illinois Foundation Fellowship in Sociology, 1975-76

1993 Winner of the Michael J. Hindelang Award of the American Society of Criminology, for the book that made "the most outstanding contribution to criminology" (for Point Blank: Guns and Violence in America).

Awarded Named Professorship, Florida State University, 2012.

Nominated for University Teaching Award, Florida State University, 2014.

Paper of the Year awarded by Criminal Justice Review for "Does Gun Control Reduce Crime?," Volume 4, pp. 488-513 (2016).

TEACHING POSITIONS

Fall, 1991 to May 2016	Professor, College of Criminology and Criminal Justice, Florida State University
Fall, 1984 to Spring, 1991	Associate Professor, School of Criminology, Florida State University.
Fall, 1979 to Spring, 1984	Assistant Professor, School of Criminology, Florida State University.
Fall, 1978 to Spring, 1979	Instructor, School of Criminology, Florida State University.

COURSES TAUGHT

Criminology, Applied Statistics, Regression, Introduction to Research Methods, Law Enforcement, Research Methods in Criminology, Guns and Violence, Violence Theory Seminar, Crime Control, Assessing Evidence, Survey Research, Research Design and Causal Inference.

DISSERTATION

Homicide, Capital Punishment, and Gun Ownership: An Aggregate Analysis of U.S. Homicide Trends from 1947 to 1976. Department of Sociology, University of Illinois, Urbana. 1979.

PUBLICATIONS (sole author unless otherwise noted)

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2015 "The impact of gun ownership rates on crime rates: a methodological review of the evidence." Journal of Criminal Justice 43(1):40-48.

2016 (with Tomislav Kovandzic and Jon Bellows) "Does gun control reduce violent crime?" Criminal Justice Review 41:488-513.

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2022 (with Tomislav Kovandzic) "The impact of firearm levels on homicide rates: the effects of controlling for cultural differences in cross-national research." American Journal of Criminal Justice 47:41-55..

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1992 "Assault weapons aren't the problem." New York Times September 1, 1992, p. A15. Invited Op-Ed page article.

1993 "The incidence of violence among young people." The Public Perspective 4:3-6. Invited article.

1994 "Guns and self-protection." Journal of the Medical Association of Georgia 83:42. Invited editorial.

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2000 (with Chester Britt III and David J. Bordua) "The emperor has no clothes: using interrupted time series designs to evaluate social policy impact." Journal on Firearms and Public Policy 12:197-247.

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RESEARCH FUNDING

1994 "The Impact of Drug Enforcement on Urban Drug Use Levels and Crime Rates." $9,500 awarded by the U.S. Sentencing Commission.

1997 "Testing a Fundamental Assumption of Deterrence-Based Crime Control Policy." $80,590 awarded by the Charles E. Culpeper Foundation to study the link between actual and perceived punishment levels.

PRESENTED PAPERS

1976 "Firearms, homicide, and the death penalty: a simultaneous equations analysis." Presented at the annual meetings of the Illinois Sociological Association, Chicago.

1979 "The assumptions of gun control." Presented at the annual meetings of the American Sociological Association, New York City.

1981 "Lethality comparisons between handguns and weapons which might be substituted in assault if handguns were prohibited." Presented at the annual meetings of the American Society of Criminology, Washington, D.C.

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1993 "Crime, culture conflict and support for gun laws: a multi-level application of the General Social Surveys." Presented at the annual meetings of the American Society of Criminology, Phoenix.

1994 (with Marc Gertz) "Armed resistance to crime: the prevalence and nature of self-defense with a gun." Presented at the annual meetings of the American Society of Criminology, Miami.

1995 (with Tom Jordan) "The impact of drug enforcement and penalty levels on urban drug use levels and crime rates." Presented at the annual meetings of the American Society of Criminology, Boston.

1996 (with Michael Hogan) "A national case-control study of homicide offending and gun ownership." Presented at the annual meetings of the American Society of Criminology, Chicago.

1997 "Evaluating the Brady Act and increasing the utility of BATF tracing data." Presented at the annual meetings of the Homicide Research Working Group, Shepherdstown, West Virginia.

1997 "Crime, collective security, and gun ownership: a multi-level application of the General Social Surveys." Presented at the annual meetings of the American Society of Criminology, San Diego.

1998 (with Brion Sever and Marc Gertz) "Testing a fundamental assumption of deterrence-based crime control policy." Presented at the annual meetings of the American Society of Criminology, Washington, D.C.

1998 "Measuring macro-level gun ownership levels." Presented at the annual meetings of the American Society of Criminology, Washington, D.C.

1999 "Can owning a gun really triple the owner's chances of being murdered?" Presented at the annual meetings of the American Society of Criminology, Toronto.

2000 "Absolutist politics in a moderate package: prohibitionist intentions of the gun control movement." Presented at the annual meetings of the American Society of Criminology, San Francisco.

2001 (with Tomislav V. Kovandzic) "The impact of gun laws and gun levels on crime rates." Presented at the annual meetings of the American Society of Criminology, Atlanta.

2001 "Measures of gun ownership levels for macro-level violence research." Presented at the annual meetings of the American Society of Criminology, Atlanta.

2002 “The effects of gun ownership levels and gun control laws on urban crime rates.” Presented at the annual meetings of the American Society of Criminology, Chicago.

2003 (with Tomislav V. Kovandzic) "The effect of gun levels on violence rates depends on who has them." Presented at the annual meetings of the American Society of Criminology, Denver.

2003 (with KyuBeom Choi) “Filling in the gap in the causal link of deterrence.” Presented at the annual meetings of the American Society of Criminology, Denver.

2004 (with Tomislav Kovandzic) "Do violent crime rates and police strength levels in the community influence whether individuals own guns?" Presented at the annual meetings of the American Society of Criminology, Nashville.

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2005 (with Jongyeon Tark and Laura Bedard) "Crime and marriage." Presented at the annual meetings of the American Society of Criminology, Toronto.

2006 (with Shun-Yang Kevin Wang) "Organized gun trafficking, 'crime guns,' and crime rates." Presented at the annual meetings of the American Society of Criminology, Los Angeles.

2006 "Are police officers more likely to kill black suspects?" Presented at the annual meetings of the American Society of Criminology, Los Angeles.

2007 (with Shun-Yang Kevin Wang) "The myth of big-time gun trafficking. "Presented at the annual meetings of the American Society of Criminology, Atlanta.

2007 (with Marc Gertz and Jason Bratton) "Why do people support gun control?" Presented at the annual meetings of the American Society of Criminology, Atlanta.

2008 (with J. C. Barnes) "Deterrence and macro-level perceptions of punishment risks: Is there a "collective wisdom?" Presented at the annual meetings of the American Society of Criminology, St. Louis.

2008 "The myth of big-time gun trafficking." Presented at UCLA Law Review Symposium, "The Second Amendment and the Right to Bear Arms After DC v. Heller." January 23, 2009, Los Angeles.

2009 (with Shun-Yung Wang) "Employment and crime and delinquency of working

youth: A longitudinal study of youth employment." Presented at the annual meetings of the American Society of Criminology, November 6, 2009, Philadelphia, PA.

2009 (with J. C. Barnes) "Do more police generate more deterrence?" Presented at the annual meetings of the American Society of Criminology, November 4, 2009, Philadelphia, PA.

2010 (with J. C. Barnes) "Article productivity among the faculty of criminology and criminal justice doctoral programs, 2005-2009." Presented at the annual meetings of the American Society of Criminology, November 18, 2010, San Francisco, CA.

2010 (with Will Hauser) "Fear of crime and gun ownership." Presented at the annual meetings of the American Society of Criminology, November 18, 2010, San Francisco, CA.

2010 "Errors in survey estimates of defensive gun use frequency: results from national Internet survey experiments." Presented at the annual meetings of the American Society of Criminology, November 19, 2010, San Francisco, CA.

2010 (with Mark Faber and Tomislav Kovandzic) "Perceived risk, criminal victimization, and prospective gun ownership." Presented at the annual meetings of the American Society of Criminology, November 19, 2010, San Francisco, CA.

2011 (with Shun-young Wang) "The impact of job quality and career commitment on delinquency: conditional or universal?" Presented at the annual meetings of the American Society of Criminology, November 17, 2011, Washington, D.C.

2011 (with Moonki Hong) "The short-term deterrent effect of executions on homicides in the United States, 1984-1998." Presented at the annual meetings of the American Society of Criminology, November 16, 2011, Washington, D.C.

2011 (with Kelly Roberts) "Which survey modes are most effective in getting people to admit illegal behaviors?" Presented at the annual meetings of the American Society of Criminology, November 17, 2011, Washington, D.C.

2011 (with Will Hauser) "Pick on someone your own size: do health, fitness, and size influence victim selection?" Presented at the annual meetings of the American Society of Criminology, November 18, 2011, Washington, D.C.

2011 (with Tomislav Kovandzic) "Is the macro-level crime/punishment association spurious?" Presented at the annual meetings of the American Society of Criminology, November 18, 2011, Washington, D.C.

2012 (with Dylan Jackson) "Adult unemployment and serious property crime: a

national case-control study." Presented at the annual meetings of the American Society of Criminology, November 15, 2012, Chicago, IL.

2013 (with Will Hauser) "Confidence in the police and fear of crime: Do police force size and productivity matter?" Presented at the annual meetings of the American Society of Criminology, November 22, 2013, Atlanta, GA.

2013. (with Dylan Jackson) "Adult unemployment and serious property crime: a national case-control study." Presented at the annual meetings of the American Society of Criminology, November 22, 2013, Atlanta, GA.

2014 (with Dylan Jackson) "Does Crime Cause Punitiveness?" Presented at the annual meetings of the American Society of Criminology, November 20, 2014, San Francisco, CA.

2015 "The effect of large capacity magazines on the casualty counts in mass shootings." Presented at the annual meetings of the American Society of Criminology, November 18, 2015, Washington, D.C.

2015 (with Bethany Mims) "Article productivity among the faculty of criminology and criminal justice doctoral programs, 2010-2014." Presented at the annual meetings of the American Society of Criminology, November 20, 2015, Washington, D.C.

2016 "Firearms and the lethality of suicide methods." Presented at the annual meetings of the American Society of Criminology, November 16, 2016, New Orleans, L.A.

2017 "Macro-level research on the effect of firearms prevalence on suicide rates: a systematic review and new evidence." Presented at the annual meetings of the American Society of Criminology, November 15, 2017, Philadelphia, PA.

2018 "Interstate gun movement is almost entirely due to migration, not gun trafficking." Presented at the annual meetings of the American Society of Criminology, November 16, 2018, Atlanta, GA.

2019 "What do CDC's surveys say about the prevalence of defensive gun use?" Presented at the annual meetings of the American Society of Criminology, November 13, 2019, San Francisco, CA.

2020 "Compliance with universal background check requirements." Accepted to be presented at the annual meetings of the American Society of Criminology which were to be held in Washington, D.C., November 18-21, 2020 but were cancelled due to Covid-19 issues.

2021 "Do mass shooters favor using large-capacity magazines?" Presented in

poster form at the Annual Meeting of the American Society of Criminology in Chicago, Illinois, November of 2021.

2022 "Is the relationship between gun control and violence spurious?" Presented at the annual meetings of the American Society of Criminology, November 18, 2022, Atlanta, GA.

CHAIR

1983 Chair, session on Race and Crime. annual meetings of the American Society of Criminology, Denver.

1989 Co-chair (with Merry Morash), roundtable session on problems in analyzing the National Crime Surveys. annual meetings of the American Society of Criminology, Reno.

1994 Chair, session on Interrupted Time Series Designs. annual meetings of the American Society of Criminology, New Orleans.

1993 Chair, session on Guns, Gun Control, and Violence. annual meetings of the American Society of Criminology, Phoenix.

1995 Chair, session on International Drug Enforcement. annual meetings of the American Society of Criminology, Boston.

1999 Chair, Author-Meets-Critics session, More Guns, Less Crime. annual meetings of the American Society of Criminology, Toronto.

2000 Chair, session on Defensive Weapon and Gun Use. annual meetings of the American Society of Criminology, San Francisco.

2002 Chair, session on the Causes of Gun Crime. annual meetings of the American Society of Criminology, Chicago.

2004 Chair, session on Protecting the Victim. annual meetings of the American Society of Criminology, Nashville.

DISCUSSANT

1981 Session on Gun Control Legislation, annual meetings of the American Society of Criminology, Washington, D.C.

1984 Session on Criminal Sentencing, annual meetings of the American Society of Criminology, Cincinnati.

1986 Session on Sentencing, annual meetings of the American Society of Criminology, Atlanta.

1988 Session on Gun Ownership and Self-protection, annual meetings of the Popular Culture Association, Montreal.

1991 Session on Gun Control, annual meetings of the American Statistical Association, Atlanta, Ga.

1995 Session on International Drug Enforcement, annual meetings of the American Society of Criminology, Boston.

2000 Session on Defensive Weapon and Gun Use, annual meetings of the American Society of Criminology, San Francisco.

2004 Author-Meets-Critic session on Guns, Violence, and Identity Among African-American and Latino Youth, by Deanna Wilkinson. annual meetings of the American Society of Criminology, Nashville.

2007 Session on Deterrence and Perceptions, University of Maryland 2007 Crime & Population Dynamics Summer Workshop, Aspen Wye River Center, Queenstown MD, June 4, 2007.

2009 Session on Guns and Crime, at the DeVoe Moore Center Symposium On The Economics of Crime, March 26-28, 2009 .

2010Panel discussion of news media coverage of high profile crimes
Held at the Florida Supreme Court On September 24-25, 2012, sponsored by the Florida Bar Association as part of their 2012 Reporters' Workshop.

PROFESSIONAL SERVICE

Editorial consultant -
American Sociological Review
American Journal of Sociology
Social Forces
Social Problems
Law and Society Review
Journal of Research in Crime and Delinquency
Social Science Research
Criminology
Journal of Quantitative Criminology
Justice Quarterly
Journal of Criminal Justice
Violence and Victims
Violence Against Women
Journal of the American Medical Association
New England Journal of Medicine

American Journal of Public Health
Journal of Homicide Studies

Grants consultant, National Science Foundation, Sociology Program.

Member, Gene Carte Student Paper Committee, American Society of Criminology, 1990.

Area Chair, Methods Area, American Society of Criminology, annual meetings in Miami, November, 1994.

Division Chair, Guns Division, American Society of Criminology, annual meetings in Washington, D.C., November, 1998.

Dissertation evaluator, University of Capetown, Union of South Africa, 1998.

Division Chair, Guns Division, American Society of Criminology, annual meetings in Washington, D.C., November, 1999.

Member of Academy of Criminal Justice Sciences selection committee for Editor of Justice Quarterly, 2007.

Outside reviewer of Dr. J. Pete Blair for promotion to Full Professor in the School of Criminal Justice at Texas State University, San Marcos, 2014.

UNIVERSITY SERVICE

Member, Master's Comprehensive Examination Committee, School of Criminology, 1979-1982.

Faculty Advisor, Lambda Alpha Epsilon (FSU chapter of American Criminal Justice Association), 1980-1988.

Faculty Senate Member, 1984-1992.

Carried out campus crime survey for President's Committee on Student Safety and Welfare, 1986.

Member, Strategic Planning and Budgeting Review Committee for Institute for Science and Public Affairs, and Departments of Physics and Economics, 1986.

Chair, Committee on Ph.D. Comprehensive Examination in Research Methods, School of Criminology, Summer, 1986.

Member, Committee on Ph.D. Comprehensive Examination in Research Methods, School of Criminology, Summer, 1986 to 2016.

Chair, Committee on Graduate Assistantships, School of Criminology, Spring, 1987.

Chair, Ad Hoc Committee on Computers, School of Criminology, Fall, 1987.

Member, Recruitment Committee, School of Criminology, Spring, 1988; Spring, 1989; and 1989-90 academic year.

Member, Faculty Senate Committee on Computer-Related Curriculum, Spring, 1988 to Fall, 1989.

Chair, Ad Hoc Committee on Merit Salary Distribution, School of Criminology, Spring, 1988.

Chair, Ad Hoc Committee on Enrollment Strains, Spring, 1989.

Member, Graduate Handbook Committee, School of Criminology, Spring, 1990.

Member, Internal Advisement Committee, School of Criminology Spring, 1990.

University Commencement Marshall, 1990 to 1993.

Member, School of Criminology and Criminal Justice Teaching Incentive Program award committee.

Chair, Faculty Recruitment Committee, School of Criminology and Criminal Justice, 1994-1995.

Chair, Committee on Ph.D. Comprehensive Examination in Research Methods, School of Criminology and Criminal Justice, 1994-1995.

Member, University Computer and Information Resources Committee, 1995-1998.

Member, University Fellowship Committee, 1995 to 2000.

Member, University Library Committee, 1996 to 1999.

Chair, Electronic Access Subcommittee, University Library Committee, 1998 to 1999.

Member, Ad Hoc Committee on Merit Salary Increase Allocation, School of Criminology and Criminal Justice, 1998-1999.

Member, Academic Committee, School of Criminology and Criminal Justice, 2000-2008t.

Member, Recruiting Committee, School of Criminology and Criminal Justice, 2000-2001.

Member, Promotion and Tenure Committee, School of Criminology and Criminal Justice, 2000-2008.

Chair, Committee on Ph.D. Comprehensive Examination in Research Methods, School of Criminology and Criminal Justice, 2000-2002.

Chair, Promotion and Tenure Committee, School of Criminology and Criminal Justice, 2001-2002.

Faculty Adviser, School of Criminology and Criminal Justice Graduate Student Association, 2001-2010.

Member, ad hoc committee on survey research, School of Criminology and Criminal Justice, 2002.

Coordinator of Parts 2 and 4 of the School of Criminology and Criminal Justice Unit Review, 2002.

Chair, Academic Committee, School of Criminology and Criminal Justice, 2002-2003.

Director, Honors Programs, School of Criminology and Criminal Justice, 2002-?.

Member, University Promotion and Tenure Committee, Fall, 2003 to ?.

Member of University Graduate Policy Committee, Fall 2003 to 2011.

Director of Graduate Studies, School (later College) of Criminology and Criminal Justice, April 2004 to May 2015.

Chair, Promotion and Tenure Committee, College of Criminology and Criminal Justice, 2005-2006

Served as major professor on Area Paper by Christopher Rosbough, completed in 2012.

Served as member of dissertation committee of Kristen Lavin, dissertation completed in 2012.

Served as member of dissertation committee of Elizabeth Stupi, dissertation completed in 2013.

Served as outside member on two dissertation committees in 2014-2015: Brian Meehan in the Department of Economics and Adam Weinstein in the English Department. Both dissertations were completed.

Served as major professor on Area Paper on legalization of marijuana for Pedro Juan

Matos Silva, Spring 2015. Paper completed.

Served as major professor for doctoral students, Moonki Hong who defended his dissertation on April 14, 2016.

PUBLIC SERVICE

Television, radio, newspaper, magazine, and Internet interviews concerning gun control, racial bias in sentencing, crime statistics, and the death penalty. Interviews and other kinds of news media contacts include Newsweek, Time, U.S. News and World Report, New York Times, Washington Post, Chicago Tribune, Los Angeles Times, USA Today, Boston Globe, Wall Street Journal, Kansas City Star, Philadelphia Inquirer, Philadelphia News, Atlanta Constitution, Atlanta Journal, Arizona Republican, San Antonio Express-News, Dallas Morning News, Miami Herald, Tampa Tribune, Jacksonville Times-Union, Womens' Day, Harper's Bazaar, Playboy, CBS-TV (60 Minutes; Street Stories) ABC-TV (World News Tonight; Nightline), NBC-TV (Nightly News), Cable News Network, Canadian Broadcasting Company, National Public Radio, Huffington Post, PolitiFact.com, and many others.

Resource person, Subcommittee on Crime and Justice, (Florida House) Speaker's Advisory Committee on the Future, February 6-7, 1986, Florida State Capitol.

Testimony before the U.S. Congress, House Select Committee on Children, Youth and Families, June 15, 1989.

Discussant, National Research Council/National Academy of Sciences Symposium on the Understanding and Control of Violent Behavior, April 1-4, 1990, Destin, Florida.

Colloquium on manipulation of statistics relevant to public policy, Statistics Department, Florida State University, October, 1992.

Speech to faculty, students, and alumni at Silver Anniversary of Northeastern University College of Criminal Justice, May 15, 1993.

Speech to faculty and students at Department of Sociology, University of New Mexico, October, 1993.

Speech on the impact of gun control laws, annual meetings of the Justice Research and Statistics Association, October, 1993, Albuquerque, New Mexico.

Testimony before the Hawaii House Judiciary Committee, Honolulu, Hawaii, March 12, 1994.

Briefing of the National Executive Institute, FBI Academy, Quantico, Virginia, March 18, 1994.

Delivered the annual Nettler Lecture at the University of Alberta, Edmonton, Canada, March 21, 1994.

Member, Drugs-Violence Task Force, U.S. Sentencing Commission, 1994-1996.

Testimony before the Pennsylvania Senate Select Committee to Investigate the Use of Automatic and Semiautomatic Firearms, Pittsburgh, Pennsylvania, August 16, 1994.

Delivered lectures in the annual Provost's Lecture Series, Bloomsburg University, Bloomsburg, Pa., September 19, 1994.

Briefing of the National Executive Institute, FBI Academy, Quantico, Virginia, June 29, 1995.

Speech to personnel in research branches of crime-related State of Florida agencies, Research and Statistics Conference, sponsored by the Office of the State Courts Administrator, October 19, 1995.

Speech to the Third Annual Legislative Workshop, sponsored by the James Madison Institute and the Foundation for Florida's Future, February 5, 1998.

Speech at the Florida Department of Law Enforcement on the state's criminal justice research agenda, December, 1998.

Briefing on news media coverage of guns and violence issues, to the Criminal Justice Journalists organization, at the American Society of Criminology annual meetings in Washington, D.C., November 12, 1998.

Briefing on gun control strategies to the Rand Corporation conference on "Effective Strategies for Reducing Gun Violence," Santa Monica, Calif., January 21, 2000.

Speech on deterrence to the faculty of the Florida State University School of Law, February 10, 2000.

Invited address on links between guns and violence to the National Research Council Committee on Improving Research Information and Data on Firearms, November 15-16, 2001, Irvine, California.

Invited address on research on guns and self-defense to the National Research Council Committee on Improving Research Information and Data on Firearms, January 16-17, 2002, Washington, D.C.

Invited address on gun control, Northern Illinois University, April 19, 2002.

Invited address to the faculty of the School of Public Health, University of Alabama, Birmingham, 2004.

Invited address to the faculty of the School of Public Health, University of Pennsylvania, March 5, 2004.

Member of Justice Quarterly Editor Selection Committee, Academy of Criminal Justice Sciences, Spring 2007

Testified before the Gubernatorial Task Force for University Campus Safety, Tallahassee, Florida, May 3, 2007.

Gave public address, "Guns & Violence: Good Guys vs. Bad Guys," Western Carolina University, Cullowhee, North Carolina, March 5, 2012.

Invited panelist, Fordham Law School Symposium, "Gun Control and the Second Amendment," New York City, March 9, 2012.

Invited panelist, community forum on "Students, Safety & the Second Amendment," sponsored by the Tallahassee Democrat.

Invited address at University of West Florida, Department of Justice Studies, titled "Guns, Self-Defense, and the Public Interest," April 12, 2013.

Member, National Research Council Committee on Priorities for a Public Health Research Agenda to Reduce the Threat of Firearm-related Violence, May 2013.

Invited address at Davidson College, Davidson, NC, April 18, 2014. Invited by the Department of Philosophy.

Public lecture, "Do Guns Cause Homicide?," Center for the Study of Liberal Democracy, University of Wisconsin-Madison, December 5, 2018.

OTHER ITEMS

Listed in:

Marquis Who's Who
Marquis Who's Who in the South and Southwest
Who's Who of Emerging Leaders in America
Contemporary Authors
Directory of American Scholars
Writer's Directory

Participant in First National Workshop on the National Crime Survey, College Park, Maryland, July, 1987, co-sponsored by the Bureau of Justice Statistics and the American Statistical Association.

Participant in Second National Workshop on the National Crime Survey, Washington, D.C., July, 1988.

Participant, Seton Hall Law School Conference on Gun Control, March 3, 1989.

Debater in Intelligence Squared program, on the proposition "Guns Reduce Crime." Rockefeller University, New York City, October 28, 2008. Podcast distributed through National Public Radio. Further details are available at http://www.intelligencesquaredus.org/Event.aspx?Event=36.

Subject of cover story, "America Armed," in Florida State University Research in Review, Winter/Spring 2009.

Grants reviewer, Social Sciences and Humanities Research Council of Canada, 2010.

Named one of "25 Top Criminal Justice Professors" in the U.S. by Forensics Colleges website (http://www.forensicscolleges.com/), 2014.

Exhibit 2

Field Test of Magazine Change Times on Two Semi-automatic Pistols

Gary Kleck

January 28, 2019

Testing Date: January 26, 2019

Testing Location: Apalachicola Public Shooting Range, Apalachicola National Forest, Southwest of Tallahassee, Florida

Shooters: Gary Kleck, Tallahassee, Florida, age 67; Joseph Stephenson, St. Augustine, Florida, age 71. Both are very occasional shooters, who shoot 1 or 2 times per year.

Timing Equipment Used: PACT Club Timer 3 audio timer, accurate to within 0.01 second.

Definition of Magazine Change Time: Measured as the time between the last shot fired with the first magazine to the first shot of the second magazine. The second magazine was sticking out of the left jeans pocket (Kleck) or a magazine pouch (Stephenson).

Environmental Conditions of Test: Outdoors, daylight, overcast, 54° F.

Pistols Used: - Glock Model 20 10 mm. semi-automatic pistol (Kleck)

- Springfield Armory model 1911-A1 in .45 ACP semi-automatic pistol (Stephenson)
-

Magazine Change Time Results (in seconds):

Kleck, 10 mm. pistol:
4.11
4.35
3.69
3.34
2.93
Average: 3.684 seconds

Stephenson, .45 cal. pistol
3.07
2.77
4.76
3.51
3.67
Average: 3.556 seconds

Combined average, all 10 magazine changes: 3.620 seconds.
Maximum: 4.76, Minimum: 2.77 seconds.

Exhibit 3

Is the Relationship Between Gun Control and Violence Spurious?

Gary Kleck

College of Criminology and Criminal Justice

Florida State University

Tallahassee, FL 32306-1273

January 6, 2022

Abstract

Data from the General Social Surveys are used to test the hypothesis that pro-violent attitudes discourage support for gun control. These nationally representative data indicate that individuals who are more approving of violence are less likely to support a law requiring people to obtain a police permit before buying a gun, especially among whites, males, and those not living in big cities. Assuming the same applies at the level of populations, it means that a higher prevalence of pro-violent attitudes in a state will discourage popular support for more gun control. These same attitudes, however, also increase violent behavior. The implication for macro-level research on the effect of gun laws is that any negative association between gun laws and violence rates is at least partly spurious, due to the positive effects of pro-violent attitudes on violence rates and their negative effect on gun control.

The Issue

Many studies have examined whether gun control laws reduce rates of violence, especially homicide, with decidedly mixed results (Wellford, Pepper, and Petrie 2005; Kleck 2013; Rand Corporation 2018). The 2018 Rand review, for example, concluded that (1) there was "supportive evidence" for the beneficial impact of just *one* gun policy (safe storage laws) of the 13 they evaluated, and that (2) evidence was either unsupportive, inconsistent, or nonexistent for the other 12 (p. 307). Nevertheless, some macro-level studies have found negative associations between the existence of state gun control laws and states' violence rates, supporting the view that gun restrictions cause reductions in violence (e.g., Kleck 2013, p. 1403; Rand Corporation 2018, pp. 307-308).

These negative associations could, however, be at least partially spurious, due to the possible effects of the prevalence of pro-violence attitudes within a state's population on (1) its rate of violent behavior, and (2) the population's support for gun control. In the absence of state-level measures of the prevalence of pro-violence attitudes, it is presently not possible to carry out a direct state-level test of this possibility, so it is necessary to instead investigate whether these potential effects operate at the level of individuals.

There is little doubt that individuals' violent attitudes affect violent behavior. Empirical evidence on this issue is virtually unanimous. For a sampling of recent research finding a significant positive association after controlling for confounders, see Ali 2011, p. 1163; Hurd 2011, p. 337; Melotti and Passini 2018, p. 247; Nunes and Hermahn 2015, p. 1337; Rasanen, Lintonen, Raisamo, Rimpelä, and Konu 2015, p. 471; Seddig and Davidov 2018; Varela, Zimmerman, Ryan, Stoddard, and. Heinze 2021. Although the relationship is not perfect, individuals with more favorable attitudes towards violence are more likely to engage in violent

behavior. It therefore is reasonable to expect that states in which individuals with pro-violent attitudes are more prevalent among residents will as a result have higher rates of violent crime.

On the other hand, there is virtually no research directly bearing on the effect of pro-violent attitudes on gun control opinion. In a study focused on other determinants of gun control positions, Kleck (1996, p. 395) reported that there appeared to be no direct effect of anti-violence attitudes on support for gun control laws. This finding, however, was based on survey data from 1980 and 1984 and was limited to persons living in places with populations of 100,000 or more. Thus, the finding may be outdated and may be limited to big city residents.

Theory

Why should pro-violent attitudes discourage support for restrictions on firearms? One possibility is that people with such attitudes may anticipate that they would be among those prohibited from acquiring or owning guns even under moderate controls such as purchase permit requirements. A second possibility is that people in this group regard the violence that they favor as defensive in character, albeit under a broader sense of "defensive" than is recognized by the criminal law. They may therefore perceive gun laws as limiting their ability to possess and use gun for self-protection. Supporting this idea, Kleck, Gertz, and Bratton (2009, p. 501) found that people who believe that they "have to be prepared to defend their homes against crime" are less likely to support banning handguns.

Prior Research - What Affects Support for Gun Control?

Prior research supports the effects of several categories of variables on whether people support or oppose gun control. The variables can be grouped into four broad categories: self-interest, instrumental, cultural/ideological, and demographic.

Self-Interest. Prior studies have consistently found that gun owners are less likely to support gun control, even moderate measures that would not prevent the average owner from acquiring guns or retaining those they have (e.g., Erskine 1972; Smith 1980; Stinchcombe et al. 1980; Kleck 1996; Wolpert and Gimpel 1998; Celinska 2007; Kleck et al. 2009; Wozniak 2017; Lizotte 2019; Filindra, Collingwood, and Kaplan 2020). Gun owner opposition to even moderate controls may result from the belief that moderate controls will later lead to the enactment of stricter, even prohibitionist, controls that would impinge on gun acquisition, possession, or use by ordinary noncriminal gun owners (Wolpert and Gimpel 1998, p. 244).

Instrumental. Some people support gun control because they believe it to be an effective instrument for reducing violence, though this belief is far from universal among gun control supporters. A 2004 national survey indicated that among U.S. adults who favored "more restrictions on handguns," only 60 percent thought that these additional restrictions would reduce crime. Even more remarkably, when supporters of further restrictions were asked if they would change their minds if research proved "that more legal restrictions on handguns would increase violent crime," 63 percent said they would still support the added restrictions. Opponents of additional gun controls were just as adamant in sticking to their opposition even if evidence showed that restrictions would *reduce* crime (Survey Documentation and Analysis, 2007). Clearly, positions on gun control are heavily grounded in factors other than beliefs about its power to affect violent crime. Nevertheless, those who *do* believe that stricter gun control reduces violence are *relatively* more likely to support controls (Tyler and Lavrakas 1983; Mauser and Margolis 1992; Hartnagel 2002; Kleck et al. 2009).

Cultural/Ideological. Variations in positions on gun control can also be seen as reflective of cultural and ideological conflict, independent of self-interest or perceptions of its efficacy as

an instrument for violence reduction. For example, Kaplan (1979) asserted that "those who wish an activity criminalized… may wish the law to make a statement about the kind of society this is and about the unworthiness of those people who engage in the behavior of which they disapprove." He saw in the antigun literature a theme that "the law should stigmatize the attitudes, values, and kinds of people who are associated with" gun ownership, and concluded that gun control advocates sought "a formal statement from the law-making bodies declaring…the ideal of a gun-free society—one that abhors violence and, hence, the means of deadly force." Supporting this culture conflict perspective, Kleck and his colleagues (2009) found that those who endorsed negative stereotypes about gun owners were more likely to support gun control.

Various dimensions of political ideology have also been found to predict gun control positions. More politically conservative people are more likely to oppose gun control (e.g., Kleck 1996, p. 396; Wolpert and Gimpel 1998; Celinska 2007; O'Brien, Forrest, Lynott, and Daly 2013; Lizotte 2019; Oraka, Sharanya, Anderson, Burgess, Siebert, and Strasser 2019; Filindra et al. 2020), as are Republicans (Wolpert and Gimpel 1998, p. 250; O'Brien et al. 2013, p. 4; Filindra and Kaplan 2017, p. 422; Lizotte 2019, p. 397). More specifically, libertarian beliefs that government is ineffective or that smaller government is better also predicts opposition to gun control (Celinska 2007; Kleck et al. 2009; O'Brien et al. 2013, p. 4; Filindra and Kaplan 2017, p. 421; Filindra et al. 2020, p. 2110).

Findings have been mixed regarding whether racist or anti-black attitudes affect gun control opinion. Kleck (1996) and O'Brien et al. (2013, p. 4) found no significant association of racist attitudes with positions on gun control, while Filindra and Kaplan (2016; 2017, p. 421) and

Filandra et al. (2020, p. 2110) found that those with anti-black racial resentment were significantly less likely to support more gun controls.

Background/Demographic. A variety of demographic or background variables are also related to positions on gun control, even when gun ownership is controlled. Support has been consistently found to be higher among females, blacks, big-city dwellers, older people, Northerners, and those with more formal education (Erskine 1972; Smith 1980; Stinchcombe et al. 1980; Kleck 1996; Wolpert and Gimpel 1998; Celinska 2007; Kleck et al. 2009; Wozniak 2017; Lizotte 2019; Oraka et al. 2019; Filindra et al. 2020). Protestants are generally less likely to support gun control than Catholics and Jews (Erskine 1972, p. 456; Smith 1980, p. 307; Kleck 1996, p. 396; Wolpert and Gimpel, 1998, p. 251; Celinska 2007, p. 243; Merino 2018, p. 8; Lizotte 2019, p. 397), though this is not especially true of born again or evangelical Protestants (Wozniak 2017, pp. 268-269; Merino 2018, p. 8; Lizotte 2019, p. 397; Filindra et al. 2020, p. 2110), and is not true of members of Black Protestant churches (Merino 2018, p. 8).

Prior Research - What Does Not Increase Support for Gun Control?

Somewhat surprisingly, factors related to exposure to crime generally do not increase support for gun control. Support is not higher among persons living in areas with higher rates of murder, rape, or robbery, while people living where burglary rates are higher are *less* likely to support gun control (Kleck 1996, p. 395). Being victimized in crime does not increase support for gun control, and may even reduce it (Kleck 1996, p. 396; Wolpert and Gimpel 1998, p. 247; Kleck 2009, p. 561; Celinska 2017, p. 243; Filindra et al. 2020, p. 2110). Likewise, although a few studies have obtained mixed support for an effect of fear of crime (Kleck 1996, p. 395; Celinska , 2007, p. 243; Filindra et al. 2020, p. 2110), most find no significant effect of fear of (or concern about) crime on gun control opinion, controlling for gun ownership (Mauser and

Margolis 1992; McClain 1993; Adams 1996; Wolpert and Gimpel 1998, p. 247; Hartnagel 2002; Filindra and Kaplan 2017, p. 421; Wozniak 2017, pp. 268-269). In sum, gun control support does not generally appear to be directly stimulated by crime rates, prior victimization, or fear of crime. Any effects of crime may instead be indirect, through their effects on gun ownership.

Methods of the Present Study

We used nationally representative samples of the U.S. adult population from the General Social Surveys (GSS) to test the effect of pro-violent attitudes on gun control positions. The GSS asked multiple questions measuring these attitudes in sixteen years, 1973, 1975, 1976, 1978, 1980, 1983, 1984, and 1986-1994. More recent fieldings of the GSS have not included the questions measuring attitudes towards violence.

Our key independent variable was an additive index computed by summing responses to five questions asking whether respondents approved or disapproved of violent acts in various hypothetical circumstances. Following Dixon and Lizotte (1987), those approving of a given violent act were coded 2, those opposing it were coded 0, and those answering "not sure" or "don't know" were coded 1. After asking the preliminary question "Are there any situations that you can imagine in which you would approve of a man punching an adult male stranger?" Rs were asked "Would you approve if the stranger . . . (1) Was in a protest march showing opposition to the other man's views?," (2) "Would you approve if the stranger was drunk and bumped into the man and his wife on the street?," (3) "Would you approve of a man punching a stranger who had hit the man's child after the child accidentally damaged the stranger's car?," (4) "Would you approve if the stranger was beating up a woman and the man saw it?," and (5) "Would you approve if the stranger had broken into the man's house?"

These five attitude items were divided into two subsets, to measure two different types of pro-violent attitudes. Prior research (Kleck et al. 2008, p. 501) had found that both gun ownership and gun control opinion were affected by support for defensive violence, so an index was computed as the sum of the scores on the three GSS items asking about approval of violent acts that could be regarded as defensive: striking a person who had hit the person's child, a person who was beating a woman, and a stranger who had broken into the man's home. The remaining two items were summed to create an index of support for aggressive violence: hitting a protest marcher and hitting a drunk. The factor analysis performed by Dixon and Lizotte (1987, p. 424) indicated that these two sets of items loaded on two different factors, which the authors interpreted as measures of violent attitudes and defensive attitudes.

The dependent variable measured whether the R supported or opposed a law requiring that a person get a permit from the police before they could buy a gun. The most important control variable measured whether the R lived in a home with a gun. Fear of crime was measured with responses to the question "Is there any area around here – that is, within a mile - where you would be afraid to walk alone at night?" The rest of the control variables (shown in Table 1) encompassed all of the variables that were found to affect gun control opinion in prior research and that were included in the GSS for the years that also measured attitudes towards violence. There were no measures of racist attitudes, negative stereotypes of gun owners, or perceived effectiveness of gun laws included in the surveys of those years. Since the dependent variable was binary, we estimated models using logistic regression. We used SPSS statistical software, and applied listwise deletion to handle missing data.

The basic analyses were repeated for subsets of the data, to explore possible contingencies in the effect of pro-violent attitudes on gun control opinion. Do the effects prevail

throughout the entire population, or are there subpopulations in which the effects operate and others in which they do not?

Findings

The descriptive statistics (mean, standard deviation, minimum, and maximum) of the variables in the analysis are reported in Table 1.

Logistic regression estimates of the parameters of the model of support for requiring a police permit to buy a gun are reported in Table 2. These results indicate that U.S. adults with more favorable attitudes towards violence are significantly ($p<.01$) less likely to support purchase permits. The estimates also support an effect of self-interest, showing that gun owners are significantly less likely to support permits. The results for the other control variables were generally consistent with prior research, including studies finding no effect of criminal victimization. One noteworthy exception is that fear of crime was significantly and positively associated with support for purchase permits.

Table 3 reports the results of analyses in which the Table 2 model of permit support was estimated within subsamples. In the only prior study that evaluated the impact of violent attitudes on gun control views, Kleck (1996) found no effect. This analysis, however, was limited to persons living in big cities (100,000 population), even though 72% of GSS respondents live in smaller places. We therefore were especially interested in whether the relationship was different in the smaller places where most of the population lives. The results indicate that the effect of pro-violent attitudes on gun control positions does indeed differ between residents of big cities and the rest of the U.S. population. The difference is quite stark. In big cities there is essentially no effect whatsoever, confirming the finding of Kleck (1996), while there is a highly significant negative association in the rest of the nation. Outside of big

cities, Americans with more pro-violent attitudes are significantly less likely to support a law requiring a permit to buy a gun. Aggregated up to the level of states, these findings imply that pro-violent attitudes are likely to suppress support for gun control laws more in states with larger shares of their populations living in rural areas, small towns, and smaller cities, and less likely to do so in states whose populations mostly reside in big cities. The subsample analyses also show that the effect of pro-violent attitudes on gun control positions is concentrated among males and among whites; there is no significant association among females or Blacks.

We also explored whether pro-violent attitudes had indirect effects on gun control opinions via gun ownership, estimating models of gun ownership in which the independent variables of primary interest were indices of support for violence. Since prior research had found the gun ownership was more likely among those with favorable attitudes towards defensive violence (Kleck et al. 2008, p. 501), we included separate measures of support for defensive violence and for aggressive violence, along with all the other variables included in the model in Table 2.

The results are shown in Table 4. They indicate that there is a highly significant positive association between attitudes supporting defensive violence and gun ownership, and a positive but nonsignificant association with support for aggressive violence. Since gun ownership strongly reduces support for gun control, this supports the view that pro-violent attitudes, mainly those favorable to defensive violence, have indirect effects on gun control opinion via gun ownership, as well as direct effects.

Conclusions

A number of limitations of this research are noteworthy. First, the data were drawn from surveys conducted in the 1980s and 1990s, because the GSS only asked the requisite questions

about attitudes towards violence in those periods. It is possible that the effect of attitudes about violence on gun control positions has changed since then. Future research should use more recent data to test whether the relationships observed in the present study still prevail in later times. Second, the analyses concerned only one type of gun control, purchase permits. It is possible that the determinants of gun control opinion, and not just levels of support, differ for different control measures. Future research should test whether pro-violent attitudes affect support for other gun control measures.

These individual-level findings have important implications for macro-level research on the effect of gun control laws on rates of violent crime. Since a wealth of prior individual-level research has found that pro-violent attitudes effect violent behavior, this implies that areas such as states, counties, or cities whose populations have more pro-violent attitudes can be expected to have higher rates of violent crime, other things being equal. The present findings, however, also indicate that pro-violent attitudes discourage support for gun control measures. Aggregated up to the populations of areas, this implies that areas whose residents have more pro-violent attitudes will be less supportive of gun measures. Thus, higher rates of pro-violent attitudes have two macro-level effects: they *reduce* support for gun control measures and, independent of any effects that gun laws may have on crime, *increase* rates of violent crime.

This implies that at least part of the negative macro-level association sometimes observed between gun control laws and violent crime rates is spurious, a product of the impact of the prevalence of pro-violent attitudes on both violent crime rates and the presence or extent of legal restrictions on firearms. Unfortunately, no direct macro-level test of this hypothesis is possible because there are currently no measures of pro-violent attitudes available for the populations of states, counties, or cities. The General Social Surveys (GSS), for example, do not sample

respondents in such a way that yields samples representative of the populations of any areas smaller than Census regions. Conversely, nationwide surveys that do produce samples representative of areas such as states, like the Center for Disease Control's Behavioral Risk Factor Surveillance System (BRFSS) surveys, do not ask questions about attitudes towards violence.

This can be changed – there is nothing to prevent surveys like the BRFSS from being modified to ask attitudinal questions like those asked in the GSS. Until that happens, it will not be possible for scholars trying to estimate the effect of gun control on violent crime rates to control for any common effects that violent attitudes may have on violent crime rates and the strictness of gun control. This in turn means that researchers will not have a sound basis for rejecting the possibility that any negative gun control/violence association they observe is spurious. In the interim, the responsible scholarly practice should be to at least explicitly acknowledge this possibility.

References

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Ali, Bina, Monica H. Swahn, and Kymberle L. Sterling. 2011. "Attitudes about violence and involvement in peer violence among youth: findings from a high-risk community." Journal of Urban Health 88:1158-1174.

Celinska, Katarzyna. 2007. "Individualism and collectivism in America: the case of gun ownership and attitudes toward gun control." Sociological Perspectives 50:229-247.

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Table 1. Descriptive Statistics

Variable	Mean	Standard Deviation	Min	Max
Support for Permit to Purchase Gun	0.75	0.44	0	1
Pro-violent attitudes	4.72	1.94	0	10
Pro-defensive violence	4.46	1.77	0	6
Pro-aggressive violence	0.26	0.73	0	4
Gun owner	0.46	0.50	0	1
Female	1.55	0.50	1	2
White	0.84	0.37	0	1
Age	44.24	17.31	18	80
Conservatism	4.08	1.32	1	7
Highest year of school completed	12.54	3.07	0	20
Income (12-point ordinal scale)	9.53	2.94	1	12
Protestant	0.64	0.48	0	1
Jewish	0.02	0.13	0	1
South	0.33	0.47	0	1
West (Rocky Mountain states)	0.06	0.23	0	1
Robbery victim	0.02	0.13	0	1
Burglary victim	0.07	0.26	0	1
Fear to walk in neighborhood	0.41	0.49	0	1

Table 2. Model of Support for Requiring a Police Permit to Buy a Gun

Variable	B	S.E.	Sig	Exp(B)
Pro-violent attitudes	-.039	.015	.01	0.962
Gun owner	-1.081	.060	.00	0.339
Female	.686	.061	.00	1.986
White	-.332	.086	.00	0.717
Age	.002	.002	.36	1.002
Conservatism	-.082	.022	.00	0.921
Education	.017	.010	.10	1.017
Income	.044	.011	.00	1.045
Protestant	-.314	.065	.00	0.731
Jewish	.932	.358	.01	2.540
South	-.226	.062	.00	0.798
West	-.774	.111	.00	0.461
Robbery victim	-.195	.229	.39	0.823
Burglary victim	-.137	.111	.22	0.872
Fear to walk	.145	.064	.02	1.156
constant	1.017	.229	.00	2.764

N=7,608 Nagelkerke R squared = .161

Notes:
B=logistic regression coefficient, S.E.=standard error of regression coefficient, Sig=2-tailed significance of coefficient, Exp(B)-exponent of regression coefficient

Table 3. Effects of Pro-violent Attitudes on Permit Support in Subpopulations

Subpopulation	n	B	S.E.	Sig	Exp(B)
Places over 100,000	2,093	-.003	.030	.915	0.997
Places under 100,000	5,515	-.050	.017	.004	0.952
Males	3,404	-.052	.021	.013	0.949
Females	4,207	-.020	.315	.347	0.980
Whites	6,379	-.048	.017	.003	0.953
Blacks	1,020	.003	.040	.933	1.003

Notes:
N=number of respondents in subsample, B=logistic regression coefficient, S.E.=standard error of regression coefficient, Sig=2-tailed significance of coefficient, Exp(B)-antilog of regression coefficient. This table reports parameter estimates the effect of pro-violent attitudes based on the same model shown in Table 2.

Table 4. Indirect Effect of Pro-violent Attitudes via Gun Ownership

Dependent Variable=GUNOWN

Variable	B	S.E.	Sig	Exp(B)
Defensive attitudes	.091	.014	.00	1.096
Aggressive attitudes	.046	.035	.18	1.047
Female	-.400	.053	.00	0.670
White	.814	.073	.00	2.256
Age	.001	.002	.43	1.001
Conservatism	.087	.019	.00	1.091
Education	-.103	.009	.00	0.902
Income	.151	.010	.00	1.163
Protestant	.602	.055	.00	1.826
Jewish	-.957	.241	.00	0.384
South	.569	.055	.00	2.088
West	.736	.107	.00	2.088
Robbery victim	-.417	.214	.05	0.659
Burglary victim	-.100	.100	.32	0.905
Fear to walk	-.283	.054	.00	0.753
constant	-1.702	.205	.00	0.182

N=7,729 Nagelkerke R squared =.176

Notes:
B=logistic regression coefficient, S.E.=standard error of regression coefficient, Sig=2-tailed significance of coefficient, Exp(B)=antilog of regression coefficient

Exhibit 4

Did Australia's Ban on Semiauto Firearms Really Reduce Violence? A Critique of the Chapman et al. (2016) Study

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January 12, 2018

Abstract

In 1996 Australia implemented what is arguably the most ambitious gun control effort ever attempted. The National Firearms Agreement (NFA) banned all semiauto rifles and shotguns and all pump-action rifles and shotguns, and involved an effort to buy up all the banned guns already in circulation. Chapman, Alpers, and Jones (2016) have published one of the most wide-ranging evaluations of the NFA conducted to date, concluding that the measure was a success. In reality, their own data, along with information from other widely available sources, indicates that:

1. The NFA did not reduce the prevalence of gun ownership in Australia.
2. The NFA only temporarily reduced the total number of guns in civilian hands; within 20 years imports of new guns cancelled out the subtractions from the gun stock produced by buybacks and gun destruction programs.
3. The NFA did not reduce Australia's homicide rate.
4. The NFA did not reduce Australia's suicide rate.
5. The NFA appears to have *increased* the rate of fatal gun accidents.
6. There is no strong evidence that the NFA reduced mass shootings in Australia. Such crimes were extremely rare even before implementation of the NFA, and were unlikely to become common even if the NFA had never been implemented.

On April 28, 1996, the worst mass shooting in Australia's modern history was committed in Port Arthur, Tasmania, triggering a wave of political support for stricter controls on firearms that culminated in the National Firearms Agreement (NFA). The main elements of the NFA were a ban on the possession, ownership, sale, transfer, manufacture, or importation of semiauto rifles and shotguns, and pump-action shotguns and rifles, followed by an ambitious attempt to buy back and destroy all the guns of these types that were already owned by Australians (Peters 2013). Lesser elements of the NFA included the introduction of gun registration and a waiting period to acquire guns. Advocates estimated that as much as 16% of the Australian gun stock was bought up as part of the NFA effort (Abrahams, Bednarzm, and Crook 1999, p. 41), so there is some merit to regarding the NFA to be the most massive gun control effort ever made by any democratic nation (Chapman, Alpers, and Jones 2016, p. 298).

Chapman et al. (2016) produced what is probably the most extensive evaluation of the NFA published to date. The authors' strongly hinted conclusions were that the NFA eliminated mass shootings in Australia and may also have reduced suicide and homicide rates. Chapman was a member of the Coalition for Gun Control (Australia), the principle organization advocating for stricter gun control in Australia in the period leading up to enactment of the 1996 NFA, from 1993 to 1996, while Alpers was arguably Australia's leading advocate of stricter gun controls and the director of GunPolicy.org, which "promotes the public health model of firearm injury prevention" (Chapman et al. 2016, p. 298; GunPolicy.org 2017a).

Although classified by the publishing journal, the *Journal of the American Medical Association,* as an "original investigation" (Chapman et al. 2016, p. 291), the article was largely a duplicate of an article published by Chapman, Alpers and Jones ten years earlier (Chapman, Alpers, Agho, and Jones 2006). The only significant new contribution of the 2016 study was the

addition of ten more years of data. The methods, data sources, and conclusions, as well as the weaknesses of the two studies, are essentially identical.

What Did the Authors' Findings Really Indicate Regarding the NFA's Impact on Homicide and Suicide?

The authors carried out univariate analyses of trends in Australian homicide, suicide, and fatal gun accident rates before and after 1996, when the NFA was implemented, compared the post-NFA trends with the pre-NFA trends, and concluded (p. 298):

> "Following the enactment of gun law reforms in Australia in 1996, there were no mass firearm killings through May 2016. There was a more rapid decline in firearm deaths between 1997 and 2013 compared with before 1997."

These conclusions are worth quoting verbatim because they make it clear that the authors were not satisfied with merely claiming that the NFA eliminated mass shootings in Australia, but that they also wanted to suggest to readers that the NFA had caused reductions in the far more frequent firearms suicides and firearms homicides not committed as part of a mass shooting - benefits that would be far more significant than the elimination of "gun massacres." After all, mass shootings in the period leading up to the NFA, from 1979 to 1996, accounted for just 104 deaths in Australia, averaging six deaths per year (Chapman et al. 2016, p. 294). These deaths accounted for less than 1% all firearms deaths (11,110 total) in Australia in the pre-NFA 1979-1996 period, and only 1/200th of 1% of all deaths from all causes (GunPolicy.org. 2017a). Notwithstanding the intense public concern aroused by mass shootings, they were always an extremely minor threat to the health and safety of Australians.

In contrast to the spin placed on their findings by the authors, here is what their findings actually indicated regarding the NFA's impact on homicide and suicide rates. In assessing these

findings, readers should keep in mind that the authors did not directly control for a single other factor that might have affected violence trends, but simply compared mortality rate trends before the NFA with trends after the NFA, and hinted to readers that if violence rates trended more downward (or less upward) after 1996 than before 1996, the NFA was probably responsible. A critical aspect of their analyses was to compare (1) trends in *firearms* suicides with trends in *non*firearms suicides, and (2) trends in *firearm* homicides with trends in *non*firearm homicides. This procedure was crucial because it helped to separate the effects of the NFA and other firearms-related factors from the effects of the many other nonfirearms-related factors that could influence trends in Australian violence. If the NFA or other gun controls helped reduce homicide or suicide, they would do so by reducing *firearms* homicides or *firearms* suicides. Thus, if the NFA had a causal effect on homicide or suicide, the authors' findings should have shown more of a post-NFA decline in *firearms* homicides or *firearms* suicides than in their nonfirearms counterparts. There were many other factors changing in Australia that could have reduced the suicide or homicide rate besides the implementation of the NFA or other restrictions on guns, but if the NFA had produced some additional reduction above and beyond the baseline reduction produced by changes in these other factors, there should have been some greater decline specifically in firearm suicides or firearm homicides.

Their findings, however, did not support this expectation at all. While the authors were correct in noting that both homicide and suicide declined overall after 1996, gun violence was already declining *before* the NFA was passed, and post-1996 declines were no stronger for firearms homicides or suicides than for nonfirearms homicides or suicides. Even more crucial, homicides and suicides *not* involving firearms declined every bit as much as those involving firearms (their Table 3), indicating that something other than gun controls were causing

reductions in homicides and suicides *in general*, regardless of whether guns were used. The authors acknowledged that gun violence did not decline any more after 1996 than nongun violence did (p. 298), but they appear to have missed the crucial significance of this pattern of findings for the credibility of their claim that the NFA reduced violence. Instead of acknowledging that the pattern is inconsistent with the proposition that the NFA caused the observed declines in suicide and homicide, they responded to these highly problematic findings with a dense web of speculations as to why the findings really did somehow indicate the NFA was a success (p. 298). Shorn of these one-sided speculations, however, their findings indicated that post-NFA declines in suicide and homicide were *not* due to the NFA, but rather were due to unknown extraneous factors that affect suicides or homicides in general, not those committed with firearms in particular.

As to what those declines in violence *were* due to, nothing in the research by Chapman and his colleagues offers any clues. The authors did not control for a single confounding variable in their analyses of national violence trends, so they had no basis for knowing what did cause the post-1996 violence declines, and no basis for ruling out the possibility that their findings reflected effects of other variables other than the NFA.

The Missing Analysis – Fatal Gun Accidents

The researchers analyzed both suicides and homicides, but did not report any analysis of the impact of the NFA on the third major category of firearm mortality, fatal gun accidents (FGAs). Instead they devoted a long paragraph's worth of special pleading as to why they did not need to analyze unintentional gun deaths (p. 298). The main reasons they offered for not doing this

analysis were unpersuasive, however, since they would have applied just as much to suicide and homicide, which the authors *did* nevertheless analyze.

Further, in their 2006 version of this research, the authors *did* analyze accidental gun deaths. Back then they apparently did not find the reasons later expressed in their 2016 article for refraining from such an analysis so compelling. The 2006 report suggests a different explanation for why their 2016 paper did not address gun accidents. The results of the earlier analysis indicated that unintentional firearms deaths actually *increased* after the NFA was implemented. Prior to 1997, gun accidents had been declining, but after the NFA went into effect the trend was reversed, and gun accidents increased (Chapman et al. 2006, p. 370). The authors did not share these unsupportive 2006 findings with the readers of their 2016 paper.

It is not obvious why the NFA would increase gun accidents, but one possibility is that some gun owners who turned in banned types of firearms replaced them with unbanned types of firearms with which they were less familiar. This could have caused accidental discharges due to incorrect handling of gun types that their owners did not know how to safely load, unload, fire, or maintain. Another possibility is that this apparent increase was a statistical mirage resulting from increased misclassification of firearms suicides as accidental gun deaths (McPhedran and Baker 2007).

Was the NFA Likely to Reduce Violence via Waiting Periods or Gun Registration?

Although the authors largely focused on the bans on "rapid-fire" types of firearms and the buyback of these guns, the NFA had many other elements. The authors were noncommittal as to which of these multi-faceted new controls would be most likely to affect violence, nor did they explain why any of the elements could affect violence rates. For example, they noted that the

NFA imposed a waiting period on gun purchases, but did not cite any prior evidence that people who commit violent acts with firearms get their guns "at the last minute" in the heat of the moment, or that would-be killers do not simply wait out a waiting period. Likewise, they offered no explanation why merely recording who owned which guns (firearms registration) would reduce violence, and no evidence that people who would in future misuse guns would register them or otherwise be affected by a registration requirement. Prior research has consistently found no effect of either waiting periods or gun registration on violence rates (Geisel, Roll, and Wettick 1969, p. 676; Murray 1975**,** p. 88; Magaddino and Medoff 1984, pp. 235-238; Kleck and Patterson 1993, pp. 267-271, 274; Langmann 2012; Kleck, Kovandzic, and Bellows 2013). People commit gun violence with guns they have possessed for quite a long time, and rarely use guns that are registered to themselves (Mouzos 2000).

Given what the authors did emphasize, they appear to have believed that the NFA's effects were instead primarily due to the ban and buyback of semi-auto long guns and pump shotguns and rifles. The authors do not cite any evidence that these specific kinds of firearms were used to commit any significant share of homicides or suicides in Australia prior to the NFA. In fact, pre-NFA Australian firearm violence rarely involved the banned types of guns. Mouzos (2000) reported than only 10% of homicides committed in 1992-1999 in Australia (excluding the Port Arthur incident) were committed with firearms banned by the NFA. If Chapman et al. had any evidence to the contrary - that a large share of pre-NFA Australian homicides (or suicides) had been committed with the banned types of firearms - they presumably would have provided it. They did not.

The NFA Did Not Reduce Gun Prevalence in Australia

The mediating variable that links stricter gun controls with reduced suicide, homicide, or firearms gun accidents is presumably *reduced firearm availability*. The authors note declines in household gun prevalence (HGP) after the NFA was enacted (p. 298), but withhold from readers the fact that gun prevalence in Australia had already been declining *before* the NFA, and that the downward trend was actually *weaker* after 1996 than it was before 1996. That is, the rate of decline in Australian household gun prevalence actually *slowed* after the NFA was implemented. There were four identical (same question wording, same sampling procedures) national surveys of the Australian population as part of the International Crime Victimization Survey (ICVS) that asked about household gun ownership, two before the NFA, in 1989 and 1992, and two after the NFA, in 2000 and 2005. The HGP was 20.1 in 1989 and 16.0 in 1992, a pre-NFA rate of decline of 1.37 percentage points per year. The HGP was 8.7 in 2000 and 6.2 in 2005, a *post*-NFA rate of decline of only 0.5 percentage points per year (van Dijk, van Kesteren, and Smit 2007, p. 279). Alternatively, one can fit a regression line to the two pre-1996 data points, yielding this equation: Predicted % of Households with Guns = 2738.4 – 1.367 (year). If the pre-1996 trend had continued, this equation predicts that the percent of households with guns would have been 4.4 in 2000. In reality, 8.7% of Australian households reported guns in 2000. That is, far more Australian households had guns after the NFA than would have been expected had pre-NFA trends simply continued. In sum, if the NFA had any effect on the HGP at all, it was to *slow* the decline in Australian gun prevalence that had already been underway well before 1996.

Why did the NFA fail to reduce gun prevalence? First, some people who owned multiple guns may have turned in one or two banned guns (e.g., a semiauto rifle) but retained possession of other guns - a point conceded by the authors in their 2006 article (p. 370). Since it only takes one gun to commit a suicide or homicide, merely reducing the surplus of additional guns

available to a given suicide- or homicide-prone person is unlikely to affect whether they subsequently commit suicide or a murder. The authors did not report the share of Australians turning in guns who owned only one gun or were otherwise left without guns after the NFA-mandated turn-in. We do know, however, that in the U.S. most participants in gun buy-back programs still owned guns even after turning in some of their guns (Callahan et al. 1994, p. 474).

Second, even among banned types of firearms, many were not surrendered to the authorities. Reuter and Mouzos (2003, p. 141) estimate that a quarter of prohibited guns in the Australian population as a whole were not turned in.

Third, the buyback and destruction of banned guns was followed by many Australians purchasing non-banned guns to replace those lost to the buy-back. Immediately after the implementation of the NFA, imports of rifles and shotguns into Australia sharply increased, more than doubling in financial year 1996-1997 over the annual average of the previous five-years. In the first 19 years after the NFA measures, from 1996-97 through 2014-15, a total of 1,041,584 modern firearms were imported for civilian use into Australia (GunPolicy.org 2017c). By comparison, the most complete count of guns surrendered and destroyed from 1987 through 2012, even including those yielded by pre-NFA programs, is 948,388 (Alpers and Wilson 2013). Thus, post-NFA imports completely cancelled out the subtractions from the gun stock produced by the gun buyback and gun destruction programs. This is perhaps not surprising, given that gun owners were paid full market value for guns turned in, so there was no economic obstacle to participants simply replacing the guns they surrendered with guns of the types that remained legally available.

In sum, the best available evidence indicates that the NFA made no contribution of its own to the already declining share of Australian households that owned guns, and in the long run did not

even reduce the size of the Australian civilian gun stock. To be sure, the replacement guns had somewhat slower maximum rates of fire than the firearms destroyed, but rate of fire is totally irrelevant to gun suicide and gun accidents, which almost always result from a single shot. Further, rate of fire is *almost* entirely irrelevant to criminal firearms violence, since the latter almost never involves large numbers of rounds being fired in short spans of time – even in mass shootings (Kleck 2016).

Leaving aside whether overall gun prevalence was reduced, it should also be noted that supporters of the NFA have not presented any evidence that any of the guns that were turned in had been possessed by people likely to commit a homicide or suicide with a gun. Banned guns may have been turned in only by people who would never have committed an act of gun violence anyway, as appears to be the case with gun buybacks in the U.S. (Kleck 1996). If only low-risk Australians were disarmed, there would be little reason to expect any substantial effects of the NFA on firearm violence. Based on their age, sex, and race, participants in U.S. gun buybacks were largely drawn from low-violence subsets of the population such as elderly white females (Callahan, Rivara, and Koepsell 1994). Chapman and his colleagues offer no evidence that participants in Australia's buy-backs were any different in this regard.

What Was Missing from the Literature Review

There was not a single reference in the authors' literature review to any empirical studies of the impact of gun ownership/prevalence rates on any kind of violence rate. If the NFA had produced most or all of its impact on violence by reducing gun availability, then it surely would have been relevant to at least briefly cite reviews of research on the effect of gun availability on rates of violence. The technically soundest prior studies, however, have consistently found no significant

net effect of gun rates on total suicide or total homicide rates. Instead, gun levels only appear to affect whether killers or suicides use firearms rather than some other weapon or method (see Kovandzic, Shaffer, and Kleck 2013 for the strongest evidence re. homicide rates; Kleck 2015 for a review of prior studies regarding the impact of gun levels on crime rates, including homicide; Kleck 2019 for the impact of gun levels on suicide rates). These repeatedly confirmed findings cast serious doubt on the conclusions of Chapman et al., since, in the absence of prior research showing an impact of firearm rates on homicide or suicide rates, there is less reason to expect that the NFA's bans and buybacks would reduce violence, even if the control measures had reduced the prevalence of gun ownership.

More specifically, Chapman et al. even excluded from their literature review three studies that had specifically evaluated the NFA. These studies found no significant effect of the NFA on Australia's firearms homicide rate, while yielding mixed findings regarding suicide (Baker and McPhedran 2007; Lee and Suardi 2010; Leigh and Neill 2010). The omission of these previous studies helps conceal the degree to which the positive assessment of the NFA by Chapman et al. was at variance with extant evidence.

Nonoperative Caveats

The authors wanted to have their cake and eat it too. They clearly wanted readers to believe that the NFA *caused* reductions in violence, especially mass shootings, but did not want to do the hard work needed to better meet the methodologically required conditions for supporting a case for a causal effect. As previously noted, they did not measure and explicitly control for even a single extraneous factor that might have affected trends in homicides, suicides, or mass shootings, and thus had no sound foundation for attributing violence declines to the

NFA. At the same time, they did not want to look like irresponsible ideologues who were recklessly overstating the support for a causal effect of the NFA on violence or were too ignorant to realize that their methods did not establish causation. Their strategy for addressing this conflict was to (1) repeatedly tell readers, through 99% of the paper, that NFA measures were "associated with" drops in gun deaths, but then, in very last sentence of the article, to state the weak caveat "it is not possible to determine whether the change in firearm deaths can be attributed to the gun law reforms" (p. 298). This could be called a "nonoperative caveat." It is supposed to satisfy critics who would point out that the authors' methods do not establish causal effects ("after all, we warned readers that we could not establish causation"), yet is nonoperative because it did not dissuade the authors from presenting the NFA in a positive light, and is unlikely to have substantially weakened the impression left with readers by the rest of the article that the NFA *did* reduce violence in Australia.

In the first sentence of their conclusions, the authors state that "…There was a more rapid decline in firearm deaths between 1997 and 2013 compared with before 1997" (p. 298). What was the point of stressing this statistical pattern if not to suggest that the 1996 NFA had contributed to declines in gun deaths? The authors then followed this statement with a caveat that is most notable for its weak and unspecific character. They noted that nonfirearm suicides and homicides declined even more sharply after 1996 than firearm suicides and homicide, but did not convey to readers that this pattern of findings is devastating to any claim that the NFA caused a reduction in violence in Australia.

A more informative caveat would have read something like this: "These findings indicate that factors not specific to guns or gun control were responsible for post-1996 declines in Australian violence – factors that affect suicide or homicide *in general*, not just those committed

with guns in particular. If the NFA's firearms controls had caused any reductions in suicide or homicide, we would have found that firearm suicide declined more sharply after 1996 than nonfirearm suicide, and that firearm homicide had declined more sharply than nonfirearm homicide. We did not. Therefore, we must tentatively conclude that the NFA was not responsible for the observed declines in rates of homicide or suicide."

Why Should the NFA Controls Have Reduced Mass Shootings?

The authors did not report how many pre-NFA mass shootings had involved guns of a type banned, and certainly did not offer any reasons why banning semi-auto rifles and shotguns, and pump-action shotguns rifles would eliminate mass shootings that did *not* involve these types of firearms. More generally, they never offered any explanation *why* reducing the availability of the banned firearms would affect the number or seriousness of mass shootings, unless one can interpret repeated references to NFA-banned types of guns as "rapid-fire" as hints at an explanation (pp. 291, 293). If this is indeed the attribute that they considered to be relevant, they did not explain why rapid rate-of-fire would affect the frequency or seriousness of mass shootings, perhaps because they considered the connection to be self-evident.

It is not at all self-evident. The shooters in mass shootings do not maintain high average rates of fire in their crimes, and certainly not rates of fire anywhere near as high as those of which semi-auto guns are capable (Kleck 2016). People with no special skills can easily fire two or three rounds in a second with such guns, i.e. taking 1/3-1/2 of a second per round, but a study of U.S. mass shootings for which rates of fire could be determined found that the shooters averaged more than *four* seconds per shot fired in 19 of the 25 incidents. Conversely, they took less than 2 seconds per shot in only 2 of the 25 incidents (Kleck 2016, p. 43). Even taking reloading time

into account, shooters can easily maintain rates of fire like these using double-barreled shotguns or lever-action rifles – gun types left legally available in Australia after the NFA was implemented. If mass shooters do not need rapid-fire to shoot as many people as they do, it is reasonable to ask why banning just "rapid-firing" rifles and shotguns, while leaving other rifles and shotguns legally available, would affect the frequency or seriousness of mass shootings. Chapman and his colleagues never said.

There was a strategic benefit to the authors' failure to provide any explanation of how banning these types of firearms would reduce mass shootings. If the authors had explicitly endorsed the idea that the banned guns encourage mass shootings because the enable shooters to fire many rounds in a short period of time, their arguments could be discredited by evidence that mass shooters in Australia rarely shot many rounds in short periods of time. Refraining from offering any hypothesis as to how or why the gun bans would reduce mass shootings helps make the hypothesis that NFA eliminated gun massacres evidence-proof. The significance of this omission will become clear in the next section.

Did the NFA Eliminate Mass Shootings in Australia?

The purported benefit of the NFA that is more heavily stressed by the authors, as well as other NFA supporters, is the reduction or elimination of mass shootings. Chapman et al. assert that the primary purpose of the NFA was to reduce mass shootings, and strongly hint that it indeed accomplished this goal. Their conclusion as stated in the Abstract was: "From 1979-1996 (before gun law reforms), 13 fatal mass shootings occurred in Australia, whereas from 1997 through May 2016 (after gun law reforms), no fatal mass shootings occurred." This was the finding most strongly highlighted by the authors – it was the first one they reported in the Results

section of the article's Abstract (p, 291), and the first one stated in the Conclusions (p. 298). They did not explicitly say that the NFA *caused* this change, but the authors could hardly have been unaware that this is precisely how many readers would interpret this conclusion.

The authors' sole evidence that NFA eliminated or greatly reduced mass shootings was the authors' simple comparison of the number of incidents that they defined as mass shootings before 1996 with the number committed after 1996. Even though the number of post-1996 incidents was indeed zero, skeptical readers might dismiss this evidence by asserting that Australia was unlikely to have many mass shootings even without the NFA. The impression that the NFA did have a major impact on mass shootings is largely dependent on just how high the pre-NFA count of mass shootings is. The contrast between the post-NFA count of zero and the pre-NFA count would impress readers only if the pre-NFA count was reasonably large, suggesting that Australia would have had mass shootings after 1996 had the NFA not been implemented.

The contrast between 13 pre-NFA mass shootings and 0 post-NFA mass shootings was impressive to many, including the editor-in-chief of the *Journal of the American Medical Association*. In an audio interview with Simon Chapman, the editor, Howard Bauchner noted this 13 vs. 0 contrast and provided a remarkably candid picture of how he interpreted it: "There are really no statistics necessary. Obviously the numbers are small, but when you go from 13 to zero, I think people can just look at the data and understand what they mean." Lest anyone misunderstand his views, he later reiterated that "clearly the massacre data are quite clear" (Journal of the American Medical Association 2016). Bauchner unmistakably believed that no further statistical analysis was needed to know that this simple comparison showed that the NFA caused the elimination of gun massacres in Australia. While others may not have been so willing

to openly express so simplistic a view of the finding, Bauchner was surely not alone in viewing the 13 vs. 0 contrast to be decisive evidence that the NFA caused this reduction in mass shootings.

The authors never explicitly stated why they believed that banning the types of firearms prohibited by the NFA, while leaving other types of firearms legally available, would reduce mass shootings, but their repeated references to "rapid-fire" guns (pp. 291, 292 [twice], 293, 298) provides a strong clue. They appear to have believed that the ability to fire many rounds in a short period of time facilitates mass shootings. Certainly this rationale for banning these types of firearms has also been expressed by other supporters of the NFA (e.g., Abrahams, Bednarz, and Crook 1999).

This belief logically implies that the NFA's ban on "rapid-fire" guns should have specifically reduced the occurrence of mass shootings in which criminals were able to kill many people because they fired many rounds in a short period of time. Conversely, there is no logical reason to believe that reducing the availability of "rapid-fire" firearms in particular would prevent shootings in which the criminals fired only a few rounds in any given brief span of time.

Chapman et al. defined mass shootings as incidents in which five or more people were killed with firearms (see their Table 1). Their compilation of 13 gun massacres, however, is potentially misleading if one interprets them all as the kinds of shootings likely to be prevented by a ban on "fast-firing" guns. "Spree shootings" are crimes in which multiple victims are shot, but over an extended period of time, in multiple separate incidents occurring in different locations. Typically only a few rounds are fired, and a few victims shot, in each location, and the spurts of firing are separated by intervals long enough to permit reloading.

At least six of the 13 incidents listed in the authors' Table 1 were spree killings, in which five or more people were indeed fatally shot, but in multiple locations, in spurts of gunfire separated by significant spans of time when the killer was changing locations, was not firing, and had ample time to reload. In any one of these spurts of firing, the shooter shot *no more than two or three victims*. These incidents did not involve large numbers of victims being shot in a brief period of time, so there is no clear reason why reducing the availability of "rapid-fire" guns of the type banned by the NFA, while leaving other common gun types available, would reduce either the occurrence of these incidents or the number of victims hurt per incident.

In the mass shooting in Top End in 1987 (see Table 1 in Chapman et al., 2016), the shooter did kill five people total, thereby meeting the authors' minimum qualifying number of victims for a mass shooting, but he did so in two different locations at separate times *five days apart*. He shot two victims in the first location and three in the second one (Sydney Morning Herald 6-20-87). If these two incidents had been treated as separate shootings, they would not even have qualified as mass shootings. Similarly, the shooting in Cangai involved a group of three criminals killing five people across two different Australian states, in three or four locations, over a period of weeks - one in "early March" 1993, one on March 24, and three in two separate incidents on March 29 (Sydney Morning Herald 3-31-93, 8-14-93).

Similarly, the killer in the Terrigal shooting killed people in three different locations, three in the first location, one in the second, and two in the third (Sydney Morning Herald 10-28-92, 10-29-92). The offender in the Surry Hills shooting killed five people in four different locations within an apartment building, having time to reload his shotgun between killings, and shooting no more than two people in any one of the locations (Sydney Morning Herald 8-31-90). The shooter in the Queen Street incident killed eight people on at least three different floors of an office

building (the 5th, 11th, and 12th floors; Sydney Morning Herald 12-9-87). Finally, the shooter in the Hoddle Street incident killed seven people in at least four different locations, though the firing locations were within about 200 meters of each other (Sydney Morning Herald 8-10-87). In each of these cases there were indeed five or more people were killed, but the shootings were done in multiple locations, with just one to three victims shot in any one of the locations and ample opportunity for the shooter to reload between each set of shots, no matter what type of gun he was using. Thus, at least six of the 13 "mass fatal shootings" listed by the authors in their Table 1 were spree shootings in which, as far as the authors knew, guns capable of rapid fire were not needed to carry out the shootings or to harm as many victims as were hurt.

Although the authors did state (Table 1 footnote) that the crimes that they defined as "mass shootings" had to involve "proximate events," their definition of "proximate" must have been generous indeed in order to classify all of these six spree shootings as mass shootings.

By including these spree shootings, the authors nearly doubled their pre-1996 count of mass shootings, and thereby greatly increased the impression that the NFA, and specifically its ban and buyback of "rapid-fire" guns, caused a big reduction in mass shootings. If one excludes these six pre-NFA spree shootings, we are left with just seven incidents in which five or more people were killed in a single place at a single brief period of time, over the 18-year period from 1979 to 1996 – about one every three years. Thus mass shootings of the type that might be affected by a ban on "rapid-fire" gun types were extremely rare in Australia even before the NFA was implemented in 1996, and therefore also likely to extremely rare after 1996 - even if the NFA was completely ineffective.

Even this comparison overstates the potential impact of the ban on "rapid-fire" gun types, however, since only two of the seven non-spree shootings were known to have been committed

with the types of guns that were later banned by the NFA: the one at Conley Vale on 10-10-87 (committed with a semiauto shotgun) and the Port Arthur massacre on 4-28-96 (committed with two semiauto rifles). Thus, there were actually just *two* shootings in the 18 years from 1979 through 1996 that were known to involve NFA-banned weapons and involved many victims shot in a single brief span of time at a single place - one every nine years. That is, there were just two incidents preceding the NFA that arguably could have been prevented or otherwise affected had "rapid-fire" semiauto firearms and pump-action shotguns and rifles not been available to the shooters. All the rest of the shootings were either spree shootings with few people hurt at any one place and time or did not involve the types of firearms banned by the NFA. This means that there would have been little reason to expect more than a few such crimes to have occurred after 1996 even if the NFA had not been implemented. A drop from just *two* NFA-preventable mass shootings before 1996 down to zero after 1996 provides considerably less impressive support for an impact of the NFA on mass shootings than the supposed drop from *13* down to zero that was touted by the authors.

The authors' ability to enumerate 13 pre-NFA mass shootings is also partly the product of an arbitrary definitional decision made by the authors. They required that a shooting involve five or more victims killed by gunfire, but ten of the 13 incidents barely qualified, with exactly five or six victims killed. Had the authors used a cut-off of *seven* or more victims, only *three* incidents in the pre-NFA period would have qualified as mass shootings. A drop from just three mass shootings before the NFA to zero after the NFA would likewise have been considerably less impressive to readers as evidence of the NFA's impact on mass shootings. The point is not that a cut-off of seven or more victims is any more "correct" than a cut-off of five or more, but rather

that the impression of a big drop in mass shootings after the NFA went into effect is to a great extent the product of an arbitrary definitional decision made by the authors.

Finally, a narrow focus on mass *shootings* rather than mass *murders* as a whole is itself misleading. Whether Australians were safer because of the NFA is a function of whether fewer people were killed, not whether fewer were killed *with guns* or fewer were killed just in incidents with many victims. Mass *murders* did not cease after 1996; only mass murder by *shooting* stopped. There were, in the two decades following the 1996 NFA, at least six mass murders in Australia in which five or more people were killed, but without the use of guns (summarized in Table 1). Since there were no known non-firearm mass murders from 1979-1996, one might regard these facts, if one followed the reasoning of Chapman et al., as evidence that the NFA caused a huge *increase* in non-firearm mass murders, from zero before the NFA to six or more after the NFA. Such a conclusion, however, would be as unjustified as the authors' hinted conclusions about the NFA's impact on mass shootings.

(Table 1 about here)

A useful comparison can be made with New Zealand, the nation that is probably most similar to Australia. New Zealand has not implemented any significant new gun controls since 1996 (Wikipedia, "Guns Laws in New Zealand" 2017) but, like Australia, it has not experienced a single mass shooting since six people were killed in Raurimu, New Zealand on February 8, 1997 (Wikipedia, "List of Massacres in New Zealand" 2017). If New Zealand can provide a relevant guide, its recent history suggests that Australia also would probably not have experienced any mass shootings after 1996, even if it had not implemented the NFA. In any case, New Zealand's experience certainly demonstrates that a nation very similar to Australia can go 20 years without a mass shooting, without it being attributable to strict gun controls.

Conclusions

As best one can tell from the available evidence, Australia's massive 1996 gun control effort was a failure. It did not reduce either suicide or homicide rates below what, based on pre-1996 trends, they would have been in the absence of the NFA, and may even have increased the number of fatal gun accidents. Based on national surveys, the gun bans and buybacks did not make any contribution to the decline in the share of Australian households that owned guns that had already been going on before 1996, and may have even slowed this decline. Although the NFA produced a temporary reduction in the gun stock, it had no long-term effect on the number of guns in civilian hands in Australia, since the nearly million guns that were surrendered and destroyed were counterbalanced by over a million new civilian guns imported into the country in the first 19 years after the ban.

Ironically enough, these negative conclusions can be supported largely on the basis of evidence generated by supporters of the gun control effort, especially Simon Chapman and Philip Alpers, as the supporting sources cited in this paper attest. Even though their evidence indicated that the NFA was probably a failure, their overall conclusions were overwhelmingly positive. Even their hinted conclusion that the NFA reduced mass shootings turns out to be far more dubious than the authors let on.

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Table 1. Non-Firearm Mass Murders in Australia, 1979-2017

Date	Incident	Number Killed	Location	Weapon
1979-1999	None			
6-23-00	Childers Palace Backpacker Hostel Fire[a]	15-18	Childers, Queensland	Arson
2-7-09	Churchill Fire[b]	10	Churchill, Victoria	Arson
7-18-09	Lin Family Murders[c]	5	North Epping, NSW	Blunt Instrument
11-18-11	Quaker Hill Nursing Home Fire[d]	11	Quaker Hill, NSW	Arson
12-19-14	Cairns Child Killings[e]	8	Cairns, Queensland	Stabbing
1-20-17	Melbourne Car Attack[f]	6	Melbourne	Car attack

Sources:

a. *Adelaide Advertiser*, 6-24-00.
b. *The Age*, 2-13-09.
c. *ABC* (Australia), 5-12-14.
d. *Sydney Morning Herald*, 11-18-11, 5-27-13.
e. *NBC News*, 12-19-14.
f. *The Age*, 3-31-17.

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JAVIER HERRERA, *Plaintiff*, v. KWAME RAOUL, in his official capacity as Attorney General of the State of Illinois, BRENDAN F. KELLY, in his official capacity as Director of the Illinois State Police, COOK COUNTY, a body politic and corporate, TONI PRECKWINKLE, in her official capacity County Board of Commissioners President, KIMBERLY M. FOXX, in her official capacity as Cook County State's Attorney, THOMAS J. DART, in his official capacity as Sheriff of Cook County, CITY OF CHICAGO, a body politic and corporate, DAVID O'NEAL BROWN, in his official capacity as Superintendent of Police for the Chicago Police Department, *Defendants.*	Case No. 1:23-cv-00532 Hon. Lindsay C. Jenkins **EXHIBIT 5** **NEWTON DECLARATION**

DECLARATION OF JOSH NEWTON

I, Josh Newton, declare as follows:

1. I am over the age of 18, of sound mind, and otherwise competent to sign this declaration.

2. I am Josh Newton. Counsel for Dr. Javier Herrera, the Plaintiff in this lawsuit, asked me to offer my opinions regarding the nature and function of semiautomatic rifles and magazines and respond to opinions regarding the nature and function of semiautomatic rifles and magazines by Defendants' experts, James Yurgealitis, Ryan Busse, and Phil Andrew. This report sets forth my qualifications, opinions, the basis and reasons for those opinions, and any materials relied upon.

3. I am being compensated for my time in this case at a rate of $200 per hour. My compensation is not contingent on the substance of my opinions.

BACKGROUND & QUALIFICATIONS

4. I am currently the Vice President of Security Operations at a firm specializing in digital identity protection for high-profile executives, athletes, and high net-worth families. My role is to oversee the firm's analysts and product development. I have worked at this firm since June 2021.

5. Before that time, I had a career in the military and as a military contractor.

6. I joined the United States Army in 2009. After attending basic training and infantry school, I was selected to join the United States Army Special Forces, commonly known as the Green Berets. I served as a Green Beret in 5th Special Forces Group from 2012 to 2016.

7. That unit's core mission is to lead indigenous populations in battle against larger and better organized military forces that are averse to the interests of the United States. As a Green Beret, I developed expertise in equipping and training these populations to fight with whatever equipment may be available. In practice, supply constraints often mean that Green Berets train and equip indigenous fighting forces with civilian-grade weapons and materiel.

8. I am proficient in advanced marksmanship and weapons maintenance for both domestic and foreign weapons platforms.

9. I developed these skills through a variety of courses during my military career. In infantry school I learned basic and advanced rifle marksmanship, which focused on the M4 rifle. In 2010, I attended the Special Forces Qualification Course, which included additional training on marksmanship and tactics for the M4, as well as squad-level machineguns. In 2014, I attended the Special Operations Target Interdiction Course where I learned the tactics, use, and maintenance of sniper weapons. In 2014, I attended the Special Forces Urban Advanced Combat Course where I learned

advanced tactics for close quarters combat and trained on rifles, machineguns, and breaching weapons specialized for that purpose.

10. The military weapons with which I am proficient include the M4 rifle, AK-47 rifle, M9 pistol, XM2010 sniper rifle, M110 sniper rifle, M82 sniper rifle, M249 light machine gun, M240B medium machine gun, M2 heavy machine gun, MP5 submachine gun, MK19 grenade launcher, M203 grenade launcher, M320 grenade launcher, AT4 antitank weapon, and the Carl Gustaf recoilless rifle.

11. The civilian weapons with which I am proficient include the AR-15 rifle, semiautomatic handguns including the Glock 17 and Glock 19, revolvers, hunting rifles including the Remington 700, and shotguns including the Remington Model 1100 and Remington Model 870.

12. After leaving 5th Special Forces Group, I worked as a contractor for paramilitary operations with the Central Intelligence Agency from July 2016 to October 2020. As part of my service with the CIA, I completed additional specialized training courses in firearms use and maintenance. Between the Army and CIA, I spent roughly 30 months conducting combat operations overseas.

13. A major part of my job in the Army and as a contractor involved training others in the proper use of firearms. That training included how to safely handle the M4, the AK-47, and other firearms, as well as marksmanship and tactics

14. Aside from my professional experience, I have used firearms nearly my entire life. I first learned to shoot at age 7 and haven't stopped since. Although it is difficult to estimate, I have probably spent at least 3,000 hours of my life training with firearms. I have likely carried a firearm more than 1,400 days of my life.

15. I personally own many firearms, including an AR-15 rifle, a Glock 19 handgun, a Glock 17 handgun, two Colt 1911 handguns, a Smith and Wesson .357 revolver, a Colt .44 magnum revolver, a Winchester .30-06 hunting rifle, a Remington .308 hunting rifle. a Remington Model 1100 12-shotgun, and a Remington Model 870 shotgun. Of these firearms, the AR-15, the Glock 17, and

the Glock 19 came standard with magazines that are banned under Illinois, Cook County, and Chicago law. I am unaware whether the manufacturers produce approved magazines that comply with those legal limits.

16. My opinions offered here are to a reliable degree of certainty and based on my technical and specialized knowledge gained over the course of my weapons experience in the United States Army Special Forces, as a CIA contractor for paramilitary operations, and the decades of my life spent handling civilian and later military weapons.

17. During the previous ten years, I have not authored any publications.

18. During the previous four years, I have not testified as an expert at trial or by deposition.

OPINIONS AND RESPONSES TO DEFENDANTS' EXPERTS

I. Semiautomatic Versus Automatic

19. An AR-15 is a semiautomatic rifle.

20. A rifle is a firearm designed to be held with two hands and fired from the shoulder. It gets its name from spiral grooves, called "rifling," that are cut on the inner surface of the barrel. These grooves cause the bullet to spin as it leaves the barrel, which stabilizes the bullet and increases accuracy.

21. A semiautomatic rifle fires one shot with each pull of the trigger. The term "semiautomatic" refers to how the firearm reloads. When a shot is fired, a semiautomatic firearm uses a portion of the released energy to load a new round. But to fire the new round, the user must again pull the trigger. It fires only as often as the user pulls the trigger. In that way, a semiautomatic firearm works like a revolver. However, a revolver is not considered a semiautomatic firearm because it uses mechanical leverage to load a new round instead of energy from the previous shot.

22. A semiautomatic firearm is different than an "automatic" firearm. An automatic firearm allows the user to fire multiple rounds of ammunition with a single pull of the trigger. Once the

first round is fired, an automatic firearm harnesses energy from that shot to continuously load *and fire* additional rounds until the user releases the trigger. Because of this continuous cycle of loading and firing, an automatic firearm is sometimes called "machine gun" or "submachine gun" depending on the type of ammunition it uses. The purpose of automatic firearms is to maximize the number of rounds that are fired in a short period of time when a high degree of accuracy is not required. For example, an infantry squad may use automatic fire to suppress an enemy position while moving closer to the target.

23. Some firearms are capable of both semiautomatic fire and automatic fire. The M16 and M4 rifles used by the United States military have this dual capability. The Thompson Submachine Gun, or "Tommy Gun," is another example. With these firearms, the user toggles between firing modes by operating a thumb switch.

24. An AR-15 is capable of semiautomatic fire only. Most handguns are capable of semi-automatic fire only.

II. Magazines and Ammunition

25. An AR-15 rifle uses standardized magazines and common ammunition.

26. A magazine is a mechanical device that feeds ammunition into a firearm. A magazine can hold a certain number of "rounds" of ammunition, where the number of rounds refers to the quantity of ammunition that a magazine holds.

27. All semiautomatic firearms require a magazine to function. It is not accurate to label standard magazines as firearm "accessories," to the extent that word implies magazines are optional, because they are integral to the operating cycle of a semiautomatic firearm. The magazine holds the ammunition for the firearm. A semiautomatic firearm is not designed to allow the user to bypass the magazine and directly insert a round into the chamber.

28. Semiautomatic firearms can be designed to use either a detachable magazine or a fixed magazine, with detachable magazines being more common. A typical AR-15 rifle is designed to use and ordinarily comes standard with a 30-round detachable magazine. Many semiautomatic handguns come standard with detachable magazines that hold a certain number of rounds. My Glock 17 and Glock 19, for example, came standard with 17-round detachable magazines.

29. Compared to a fixed magazine, a detachable magazine makes it easier for the user to load and unload the firearm. For example, loading or unloading an AR-15 rifle requires two steps. To load, the user (1) attaches the magazine and (2) loads a round into the chamber by pulling and releasing the charging handle. To unload, the user (1) detaches the magazine and (2) removes the round from the chamber by pulling the charging handle. The steps to load and unload a semiautomatic handgun like the Glock 17 are similar.

30. Loading and unloading a firearm with a fixed magazine requires more steps. To load, the user opens the firearm's action—the mechanical assembly responsible for loading, firing, and extracting ammunition—to expose the fixed magazine and manually inserts each round one by one into the fixed magazine. The user then cycles the action—for example, by "pumping" a pump-action shotgun—to load a round into the chamber. To unload a firearm with a fixed magazine, the user opens the action to remove any live round from the chamber. Then, the user manually removes each round from the fixed magazine one by one by cycling the action, or else by opening the fixed magazine and dumping the rounds.

31. A fixed magazine can pose more safety risks than a detachable magazine. Because of the way a fixed magazine must be unloaded, a round can be mistakenly left inside the fixed magazine when the user thinks it is empty. Mistakes during unloading are a common reason for negligent or accidental discharges, which may cause grave injury or death.

32. Firearms with a detachable magazine can be better suited for self-defense in the home because of how they are loaded and unloaded, as compared to firearms with fixed magazines. For example, gun owners living with children may prefer to keep their firearms unloaded until they are needed. Firearms with detachable magazines are ideal for these gun owners because they can be loaded quickly in case of emergency. By contrast, keeping firearms with fixed magazines unloaded is not practical for self-defense because they take more time and would be more difficult to load under stress. That is one advantage AR-15 rifles have for home self-defense over shotguns, which typically use fixed magazines.

33. A semiautomatic firearm is designed to be used with the magazine that comes with it, or a replacement magazine approved by the manufacturer. Detachable magazines rely on a mechanical spring to feed ammunition into the firearm. The magazine's spring length and tension are specifically engineered to allow proper function of the firearm. The AR-15 rifle and Glock semiautomatic handguns use this type of magazine.

34. Aftermarket magazines that are not specifically designed for use with a firearm may cause the firearm to malfunction. For example, it is possible to purchase 50- or 100-round magazines for an AR-15. Due to their size, these extended magazines have a different spring tension than a standard 30-round magazine. As a consequence, these magazines may not reliably feed ammunition into the AR-15. The same is true for magazines that hold less ammunition than a standard magazine.

35. Magazines must be replaced periodically. Both the spring and the body of the magazine wear overtime. When a magazine spring wears, the tension changes and causes the firearm to malfunction. A magazine with a worn spring can be repaired by replacing the spring. But a magazine with a worn or deformed body is not serviceable and the user must replace the magazine, preferably from, or approved by, the firearm manufacturer to mitigate jamming or other possible malfunctions with non-OEM replacement magazines.

36. Firearms are often described according to the caliber of ammunition they fire. The caliber of ammunition refers to the bullet's diameter. Caliber can be expressed in metric units or standard units. For example, a 9mm handgun (pronounced "nine-millimeter"), fires a bullet that is roughly 9 millimeters in diameter. And a .45 handgun (pronounced "forty-five") fires a bullet that has roughly a 0.45-inch diameter.

37. The AR-15 is commonly classified as a .22-caliber rifle (pronounced "twenty-two"). A standard AR-15 fires .223 Remington ammunition, which has a bullet with roughly a 0.223-inch diameter.

38. Rifle ammunition will vary depending on the type of rifle and the particular use.

39. Many rifles used for deer hunting fall within the class of .30-caliber rifles (pronounced "thirty"). These rifles are more powerful than a .22-caliber rifle and fire a bullet between 0.3 and 0.399-inch in diameter. Common .30-caliber deer hunting rifles use .30-06, .308 Winchester, and .300 Winchester Magnum ammunition. It is possible to purchase an AR-15 that uses .30 caliber ammunition, but .22 caliber is standard.

40. Figure 1 shows a side-by-side comparison of the .223 Remington cartridge that is typical of AR-15 rifles, and the .30-06 cartridge that is typical of deer hunting rifles.

Figure 1 – Comparison of .30-06 (left) and .223 Remington (right).

41. The United States military uses 5.56mm ammunition for several standard weapons, including the M16 and M4. The bullet diameter for 5.56mm and .223 Remington is roughly the same. (5.56 millimeters equals 0.219 inches.) And some AR-15s can fire 5.56mm ammunition. But 5.56mm ammunition is heavier and has higher pressure when fired, allowing the bullet to travel faster and farther while maintaining accuracy. Special operations units in the United States military have begun moving away from using 5.56mm ammunition for close-range combat operations. A combination of that cartridge's speed and small size makes it less effective to disable or kill an enemy combatant. For that reason, there are special operations units now using rifles that fire .300 Blackout or .308 Winchester ammunition, which fire a larger, slower bullet in the .30-caliber class of ammunition.

42. The .223 Remington ammunition that is used in AR-15 rifles is a centerfire cartridge.

43. Centerfire ammunition refers to the design of the cartridge. It contains a primer in the center-rear of the cartridge. Pulling the trigger of a firearm designed to fire centerfire ammunition causes a firing pin to strike the primer, which ignites propellant inside the cartridge to expel the bullet

from the barrel. Centerfire ammunition is significantly more reliable that other ammunition types and is used in virtually all firearms designed for self-defense.

44. Another common type of .22 caliber ammunition is the .22LR rimfire cartridge. A rimfire cartridge has primer inside the rear-rim of the cartridge. Pulling the trigger of a firearm designed to fire rimfire ammunition causes a firing pin to strike the rim of the cartridge, which compresses the primer and ignites the propellant. Rimfire ammunition is more likely to malfunction than centerfire ammunition and can be used only with low pressure rounds. For those reasons, firearms designed to fire .22LR ammunition are poorly suited for self-defense but are commonly used for target practice and hunting squirrels, rabbits, and other small game. By contrast, common deer hunting ammunition like .30-06, .308 Winchester, and .300 Winchester Magnum are all centerfire cartridges.

45. Rifle ammunition like .223 Remington is different than handgun ammunition. Rifle ammunition generally fires a bullet that is lower caliber (smaller in diameter) than the bullet fired by handgun ammunition. Common handgun calibers include 9mm, .38 special, .40, and .45 ACP, all of which are centerfire cartridges.

46. Automatic firearms are classified by the type of ammunition they fire. Automatic firearms that use rifle ammunition are commonly referred to as "machine guns." Automatic firearms that use pistol ammunition are commonly referred to as "submachine guns." The Thompson Submachine Gun (or "Tommy Gun"), for example, fires .45 ACP ammunition, a common centerfire pistol cartridge.

47. All firearm ammunition is capable of producing lethal wounds. The primary determinant of whether a gunshot wound is fatal is where that shot strikes the target. Different types of ammunition produce different effects on tissue. Based on my training and other experience, I know that virtually all rifle ammunition travels at speeds that can produce cavitation (an area of damage of greater diameter than the bullet itself) in tissue upon impact. In addition, hollow point ammunition,

which is commonly used in handguns, can also produce tissue damage of greater diameter than the bullet because hollow point bullets are designed to expand upon impact.

III. Firearm Selection for Self-defense

48. Selecting a firearm for self-defense is a personal decision that turns on many factors, including the user's experience level and stature, the user's environment, and whether the firearm will be used for self-defense at home or self-defense in public. Accordingly, the proper firearm for self-defense is not a one-size-fits-all answer. As a general matter, the best firearm is the one with which the user is most comfortable.

49. AR-15s, handguns, and shotguns are all good candidates for self-defense in the home. All allow greater control than continuous fire of a machinegun. As between AR-15s and handguns, handguns can be better suited for personal self-defense in public due to their size. But as between AR-15s and handguns, AR-15s can be easier to use for home self-defense because they are larger and thus easier to hold than handguns, and thus give the user greater control. The AR-15 has a longer barrel length than a handgun, which helps the user to fire more accurately, especially in a stressful situation. In addition, the user can place the front hand farther towards the muzzle, which gives the user greater control. And accessory rails on the front handgrip allow the use to mount a flashlight to facilitate self-defense in an unlit home or on unlit personal property.

50. As between AR-15s and a bolt-action rifle or a pump-action shotgun, AR-15s are superior for home self-defense. That is because AR-15s are semiautomatic, meaning they do not require the user to manually reload after each shot while in a confrontation with an attacker. A user cannot reliably assume that a single shot will stop an attacker, or that there will be only one attacker. Having to reload a firearm in the middle of a deadly encounter exposes the user to extreme danger.

51. Contrary to the opinions of Defendants' experts Phil Andrew (at ¶¶58-61) and James Yurgealitis (at ¶110), AR-15s are well-suited for self-defense in the home. Their opinions do not account for the fact that the United States military uses rifles—primarily the M4 rifle in semiautomatic mode—for confrontations inside dwellings. Likewise, civilians can use civilian semiautomatic rifles for confrontations inside dwellings.

52. Magazine capacity is also an important consideration for self-defense. It would be absurd to assume that one round of ammunition is sufficient. When facing an imminent attack on one's life, an individual must be prepared to shoot until the threat is eliminated, including in situations with multiple assailants. I disagree with Defendants' expert James Yurgealitis's reliance on statistics purporting to show that "the average number of shots fired in a defensive scenario was 2.2." There is no such thing as an "average" self-defense situation. It is irrelevant whether other self-defense encounters in different circumstances were resolved with a relatively few number of shots.

53. A firearm selected for self-defense should be used with its standard components, including a standard magazine. Using a firearm with non-standard components increases the likelihood that the firearm will malfunction. Malfunctions during hunting or sport shooting are tolerable. But a malfunction during a life-or-death situation can mean that the user, or anyone the user is defending, is killed.

54. Shot placement is a heightened concern for home self-defense with any weapon, not just semiautomatic rifles. All ammunition, including the .223 Remington ammunition used in AR-15s or 9mm ammunition used in many handguns, can penetrate walls. The risk of overpenetration is inherent to the use of firearms inside a dwelling. This is a concern not only in homes, where loved ones or innocent bystanders may be located in adjacent rooms, but also in military operations, where friendly units may be operating in adjacent rooms of a target building. In the military, it is the responsibility of each soldier to understand where each shot will travel before taking it, whether using an M4

rifle or sidearm. The same is true for gun owners inside their own homes, and that is why sufficient training and firearms proficiency is so important.

55. Using a firearm responsibly requires training. Training is the main factor that determines whether a user can deploy a firearm safely, not the type of firearm that is used. The same is true when defending against an armed attacker. An attacker's level of training is far more important than what firearm the attacker uses. For example, an attacker that is accurate with a handgun and makes effective use of cover can prove more dangerous than an untrained attacker with an AR-15.

56. I disagree with several recommendations offered by Yurgealitis (¶¶102-110) for selecting a firearm for self-defense. I disagree that the AR-15's safety switch and detachable magazine make that firearm unsuitable for self-defense. A safety switch prevents accidental or negligent discharges, which can injure or kill family or bystanders. A detachable magazine allows homeowners with children to keep an AR-15 unloaded until there is a need to use it, and then quickly load the AR-15 when the need arises.

57. I disagree that AR-15s are inferior to handguns because they require two hands to operate. I would advise against operating any firearm including handguns with one hand, especially in high-stress self-defense situations. To the contrary, two-handed operation of a firearm is best practices. Firing a gun with two hands provides greater accuracy and control. Nor do I recommend that a user attempt to dial the police or assist others while holding a weapon and engaged in a life-or-death encounter with an attacker.

58. I also disagree that the handguns Yurgealitis recommends would necessarily be easier to operate than an AR-15 in a self-defense encounter. The pump-action shotguns he recommends would require the user to manually load each round into the fixed magazine if the user desires to keep the shotgun unloaded until the need arises. The revolvers he recommends have short barrels and small frames, which make those firearms more difficult to hold, aim, and manage recoil, especially under

stress. I also disagree that an AR-15 is particularly difficult to load. The steps for loading an AR-15 are substantially similar to the steps for loading a semiautomatic handgun. And unlike a pump-action shotgun, the AR-15's detachable magazine allows the user to store it unloaded until the need arises.

59. I also disagree that concealability should be the dominate factor for choosing a firearm to carry for self-defense. Concealability is a small, if not nonexistent, concern for self-defense in the home. But for all self-defense situations, the user's primary concern must be safety and accuracy. A smaller firearm sacrifices both, because a small firearm affords the user less grip and a shorter barrel length leaves less room for error when aiming. Only once a user is highly competent with firearms should he or she consider downsizing to a smaller firearm for concealability's sake.

60. I also disagree that a firearm user can compensate for smaller magazines with spare magazines. Yurgealitis is correct that a self-defense encounter may require the user to fire more rounds than a small magazine can hold. A user in a high-stress violent attack should mitigate the possibility that he will have to locate a spare magazine and then safely change the magazine.

IV. AR-15 Platform and Uses

61. The AR-15 rifle is a reliable, low cost, and lightweight firearm.

62. Historically, rifles were constructed of steel and wood. Modern rifles like the AR-15 are constructed primarily of aluminum alloy and plastic. These lightweight materials make the AR-15 safer and easier to use for individuals with smaller stature, including women.

63. The letters "AR" in AR-15 refer to ArmaLite, the company that created the AR-15. The letters "AR" do not refer to "assault rifle" or "automatic rifle."

64. Every rifle can be lethal, just as every handgun can be lethal. It is difficult to reliably characterize one firearm as "more lethal" than another firearm. For example, rifles commonly used for deer hunting are more accurate, more powerful, and reach longer ranges than the standard-caliber AR-15 rifle. The force imparted by .223 Remington ammunition, which is used in standard AR-15

rifles, is less likely to stop a deer unless the shot strikes the animal's vital organs. In that way, someone might describe these deer-hunting rifles to be "more lethal."

65. The AR-15's rate of fire is similar to other semiautomatic firearms, including semiautomatic handguns. The theoretical maximum rate of fire for a non-automatic firearm ultimately depends on the user and is also affected by how quickly a firearm reloads after each shot. For example, a bolt-action rifle has a relatively slow rate of fire because the user must manually cycle the action to load a new round after each shot. Semiautomatic firearms load a new round without the user's input, so the rate of fire depends only on how fast the user locates the target, aligns the sights, fires a shot, pulls the trigger, manages the recoil, and repeats that process to pull the trigger again. The rate of fire also depends on the circumstances. At a shooting range, a proficient user of an AR-15 or other semiautomatic rifle, or a semiautomatic handgun, could theoretically fire around 45 rounds per minute at a stationary target. In a real-word situation like hunting or self-defense, the rate of fire will ordinarily be slower, especially if the user is adjusting his shot for a moving target. By comparison, military-issued automatic weapons can fire hundreds of rounds per minute.

66. Magazine capacity will modestly affect the rate of fire. If a firearms user is prepared with an additional magazine on his or her person, magazine capacity will affect the rate of fire by a few seconds. With a magazine readily available, an average user can change magazines in under three seconds, while a highly proficient user can change magazines in under one second. An evil actor intent on perpetuating a mass shooting who is a proficient firearms user can fire dozens of rounds per minute even with a smaller magazine, with only one or two seconds between magazine changes, if he has multiple spare magazines with him.

67. The AR-15 is often referred to as a rifle "platform." The term "platform" refers to the AR-15's modular design that allows it to be adapted to a variety of uses, including hunting, land management and livestock protection, target shooting, and self-defense.

68. For example, an AR-15's front handguard can be outfitted with accessory rails. These rails might be used for hunting. They allow attachment of a bipod to help a hunter achieve better accuracy over long distances. They can also be useful for self-defense. For self-defense use, the accessory rails allow mounting of a front hand grip to enhance the user's safety, control, and accuracy with the firearm. These rails also allow mounting of a flashlight to aid nighttime self-defense. An additional accessory rail located on the AR-15's upper receiver allows mounting of a magnified rifle scope for hunting, a holographic sight for self-defense, or other aiming devices. Adapting the rifle's aiming device to each specific use increases the firearm's safety and accuracy.

69. The AR-15 also comes standard with a modular buttstock, at the rear of the rifle abutting the user's body. The length of the standard buttstock can be adjusted to fit the user's body type. The AR-15 also allows the user to change between different styles of buttstock according to the desired use. For example, hunting buttstocks often have an adjustable cheek rest to better align the user's eye with a magnified scope. The buttstock of an AR-15 fits over a component called a "buffer tube." A buffer tube is essential to the rifle's operation and cannot be removed without special tools. Because of the buffer tube, even an AR-15 with a buttstock that is shortened or removed will still be difficult if not impossible to conceal on one's person.

70. An AR-15 rifle often comes equipped with a muzzle device at the end of the barrel. These muzzle devices typically serve two functions. First, they reduce the bright flash that occurs when a round is fired, which can impair the user's vision at night. Second, they channel gases from a fired round to prevent the barrel from rising after each shot, which increases accuracy. The muzzle device does not reduce the rifle's sound.

71. An AR-15 has a vertical grip for the user's rear hand. The rear grip is commonly called a "pistol grip" because it resembles the rear portion of a pistol. A pistol grip enhances safety, control,

and accuracy by allowing the user to hold the rifle in a more natural position on the shoulder. It also makes it easier to reload the rifle and to clear malfunctions.

72. Some of these features are modest improvements on the design of 18th-century firearms. For example, muskets and early rifles were designed to allow the user to place his front hand underneath the barrel. The AR-15 improves on that design by including a shroud that fully encircles the barrel to make it less likely that the user's front hand will make inadvertent contact with a hot barrel. Other features of an AR-15, including the pistol grip, buttstock, and muzzle device, increase safety by making the rifle more accurate and comfortable for the user.

73. It is misleading to describe these features as having exclusively, or even predominantly, a military purpose. Improvements that make semiautomatic rifles more effective for military use also make them more effective for hunting, sport shooting, and self-defense. The difference between military and other uses depends on the context in which the firearm is used, not merely the features that a firearm has. For example, the technological advances of rifles over muskets make them more effective for both military operations and for hunting or self-defense.

74. The AR-15's characteristics and versatility make that rifle well-suited for a variety of lawful uses, including self-defense, hunting, land management and livestock protection, and sport shooting.

75. The AR-15 rifle is suitable for self-defense for the reasons discussed above. AR-15 rifles also enable homeowners to be prepared to defend themselves against a sustained threat, including by multiple assailants where a larger magazine capacity is necessary, especially in circumstances where police might be slower to arrive.

76. Beyond self-defense, AR-15s can be used for hunting, land management, and livestock protection. The AR-15's magazine capacity facilitates those lawful uses, for example, to defend sheep

or other livestock from coyotes, which generally hunt in packs. AR-15 ownership is common in rural areas for these reasons.

77. In my experience, AR-15 rifles are not marketed exclusively, or even primarily, to extremists, criminals, or civilians with aspirations to work in the military or as police. Like any product, manufacturers tend to market AR-15s in accordance with their common lawful uses, including self-defense, hunting, land management and livestock protection, and sport shooting. The examples of sensationalized marketing campaigns cited by the Defendants' expert Ryan Busse are the exception, not the rule.

V. An AR-15 Is Not A Military-Issued Weapon

78. An AR-15 is not a military-issued weapon. Rifles issued by the United States military must be capable of fully or partially automatic fire. Fully or partially automatic fire is needed for certain battlefield tactics, including providing cover.

79. Military-issued weapons include the M16 and the M4. These rifles have the capability to shoot automatically or in three-round bursts—meaning the rifle will fire multiple bullets so long as the trigger is depressed. The general public generally cannot own these weapons.

80. Some military-issued weapons are squad-level weapons that are not for individual use. For example, an M240B machine gun is squad-level firearm operated by three individual soldiers: a machine gunner, assistant machine gunner, and ammunition bearer. For another example, an M249 light machine gun is the "squad automatic weapon," or SAW, that is operated by a single person often for suppressive fire that allows the squad to maneuver. Both the M240B and M249 are fully automatic firearms.

81. By comparison, a civilian semiautomatic rifle such as the AR-15 is widely owned by the general public and is not a military-issued weapon. Described above, an AR-15 does not have the automatic capabilities that military-issued weapons have; it will fire only once for every time the trigger

is depressed. Firing another bullet requires depressing the trigger again. The speed of firing, therefore, depends on how quickly the user can depress the trigger. The rates of fire for a military-issued weapon in automatic mode and a civilian semiautomatic firearm are very different. An M16 in automatic mode can fire up to 800 rounds per minute, and a M4 in automatic mode can fire up to 970 rounds per minute. A proficient AR-15 user can accurately fire 45 rounds per minute. A proficient user of a semiautomatic handgun can accurately fire at about the same rate.

82. While it is not a military-issued weapon, a proficient user of an AR-15 will have developed skills that could carry over to military-issued weapons or for military or militia, police, or other combat situations. A proficient user of an AR-15 in Ukraine, for example, would not have to undergo extensive training to transition from using his or her personal AR-15 rifle to a military-issued weapon in the ongoing war there, if a military-issued weapon were available.

83. Relatedly, if there were a shortage of military-issued weapons, an AR-15 could be used in combat zones. Because of the AR platform's standardized parts, standardized ammunition, detachable magazine, low cost, and adaptability, individuals called to militia service could add certain components to equip their rifle for military use. For example, a civilian in Ukraine with an individually owned AR-15 could attach military-issued equipment (*e.g.* night vision, a laser sighting devise, or a grenade launcher to fire flares, smoke canisters, or other munitions), to aid the military in national defense.

84. I have personally trained and equipped civilians in other countries to use civilian rifles to fight against extremist groups.

VI. Proficiency

85. Routine training with any firearm, including the AR-15, is necessary to maintain proficiency. Proficiency increases accuracy and safety with the firearm in a variety of applications, such as hunting, sport shooting, and self-defense. I disagree with Defendants' expert Phil Andrew that a user

can accurately fire an AR-15 "well beyond 100 yards with little skill development." Safety and accuracy with firearms at all distances requires training. And because handling firearms is a perishable skill, users must continue to train throughout their period of ownership.

86. Cross-training for the military and other combat operations is important and common. Military units spend considerable time training their soldiers on array of tasks that fall outside an individual soldier's primary role. For example, riflemen frequently train on medical skills and radio communications. Cross-training allows each soldier to understand how his or her role fits into the bigger picture. And it allows a soldier to fill multiple roles if the need arises.

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

Executed: March 13, 2023

Josh Newton

CERTIFICATE OF SERVICE

I filed a true and correct copy of this supplemental appendix with the Clerk of this Court via the CM/ECF system, which will notify all counsel.

Dated: June 19, 2023

/s/ Taylor A.R. Meehan

Counsel for Plaintiff-Appellant

CERTIFICATE OF COMPLIANCE WITH CIRCUIT RULE 30

Counsel certifies compliance with Cir. R. 30. All materials required by Cir. R. 30(a) are included in the appendices to previously filed briefs, and additional materials permitted by Cir. R. 30(b) are included in a separate appendix filed with this brief.

Dated: June 19, 2023

/s/ Taylor A.R. Meehan

Counsel for Plaintiff-Appellant