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8
 9 IN THE UNITED STATES DISTRICT COURT
 10 FOR THE EASTERN DISTRICT OF CALIFORNIA
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 13 **MARK BAIRD and RICHARD**
GALLARDO,
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 Plaintiffs,
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 v.
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ROB BONTA, in his official capacity as
Attorney General of the State of California,
 17 **and DOES 1-10,**
 18
 Defendants.
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Case No. 2:19-cv-00617-KJM-AC
DECLARATION OF R. MATTHEW WISE IN SUPPORT OF DEFENDANT ATTORNEY GENERAL ROB BONTA'S MOTION FOR SUMMARY JUDGMENT
 Date: December 17, 2021
 Time: 10:00 a.m.
 Dept: 3
 Judge: Hon. Kimberly J. Mueller
 Trial Date: None set
 Action Filed: April 9, 2019

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 21 I, R. Matthew Wise, declare as follows:

22 1. I am a Deputy Attorney General in the California Attorney General's Office. I
 23 represent Defendant Rob Bonta, in his official capacity as Attorney General of the State of
 24 California (Defendant), in the above-captioned matter. I have personal knowledge of each fact
 25 stated in this declaration, and if called as a witness I could and would testify competently to such
 26 facts under oath.

27 2. On August 27, 2021, Defendant provided to Plaintiffs the expert report of Fordham
 28 history professor Saul Cornell. On November 16, 2021, Defendant provided to Plaintiffs an

1 amended version of the report with non-substantive edits. Attached hereto as Exhibit 1 is a true
2 and correct copy of Professor Cornell's August 27, 2021 expert report, as amended on November
3 16, 2021.

4 3. Attached hereto as Exhibit 2 is a true and correct copy of "Right-to-Carry Laws and
5 Violent Crime: A Comprehensive Assessment Using Panel Data and a State-Level Synthetic
6 Control Analysis," by Stanford Law Professor John J. Donohue III, et al., an article published in
7 the April 2019 issue of the Journal of Empirical Legal Studies.

8 3. Attached hereto as Exhibit 3 is a true and correct copy of "RTC Laws Increase
9 Violent Crime: Moody and Marvell Have Missed the Target," by Donohue, et al., an article
10 published in the March 2019 issue of Econ Journal Watch.

11 4. Attached hereto as Exhibit 4 is a true and correct copy of "Easiness of Legal Access
12 to Concealed Firearm Permits and Homicide Rates in the United States," by Boston University
13 Professor of Public Health Michael Siegel, et al., an article published in the December 2017 issue
14 of the American Journal of Public Health.

15 5. On August 27, 2021, Defendant provided to Plaintiffs the expert report of former
16 Covina Chief of Police Kim Raney. Attached hereto as Exhibit 5 is a true and correct copy of
17 Chief Raney's August 27, 2021 expert report.

18 6. On August 31, 2021, counsel for Defendant deposed Plaintiff Mark Baird. Attached
19 hereto as Exhibit 6 is a true and correct copy of excerpts from the transcript of Mr. Baird's
20 deposition.

21 7. On August 31, 2021, counsel for Defendant deposed Plaintiff Richard Gallardo.
22 Attached hereto as Exhibit 7 is a true and correct copy of excerpts from the transcript of Mr.
23 Gallardo's deposition.

24 I declare under penalty of perjury that the foregoing is true and correct. Executed on
25 November 19, 2021, at Sacramento, California.

26 /s/ R. Matthew Wise

27 R. MATTHEW WISE

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EXHIBIT 1

Expert Witness Report of Professor Saul Cornell, Ph.D**August 27, 2021 (as amended on November 16, 2021)****Introduction**

I have been asked to provide an expert opinion on the history of firearms regulation in the Anglo-American legal tradition, with a particular emphasis on the regulation of public (also referred to as “open”) carry of arms at the national, and state level, with specific attention to California’s regulatory history. My writings on the Second Amendment and gun regulation have been widely cited by state and federal courts.¹ My scholarship on this topic has appeared in leading law reviews and top peer-reviewed legal history journals. I authored the chapter on the right to bear arms in the *Oxford Companion to the U.S. Constitution* and co-authored the chapter in *The Cambridge History of Law in America* on the Founding era and the Marshall Court, the period that includes the adoption of the Constitution and the Second Amendment.² In addition to teaching constitutional history at Fordham College, I teach constitutional law at Fordham Law School. I have been a Senior Visiting research scholar on the faculty of Yale Law School, the University of Connecticut Law School, and Benjamin Cardozo Law School. I have given invited lectures, presented papers at faculty workshops, and participated in conferences on this topic at Yale Law School, Harvard Law School, Stanford Law School, UCLA Law School, the University of Pennsylvania Law School, Columbia Law School, Duke Law School, Pembroke College Oxford, Robinson College, Cambridge, Leiden University, and McGill University.

Following *Heller*’s instruction to look to history for guideposts in evaluating the scope of permissible regulation under the Second Amendment, recent scholarship has uncovered a previously hidden history of arms regulation in the Anglo-American legal tradition.³ Much of

¹ For a list of scholarship activity and court citations, see Attachment A.

² Saul Cornell, *The Right to Bear Arms*, in *The Oxford Handbook of the U.S. Constitution* 739 (Mark Tushnet et al., eds. 2015); Saul Cornell & Gerald Leonard, *Consolidation of the Early Federal System*, in 1 *The Cambridge History of American Law* 518 (Michael Grossberg & Christopher Tomlins eds., 2008); see also Saul Cornell, *History, Text, Tradition, and the Future of Second Amendment Jurisprudence: Limits on Armed Travel under Anglo-American Law, 1688–1868*, 83 L. & Contemp. Probs. 73 (2020); Saul Cornell & Nathan DeDino, *A Well Regulated Right: The Early American Origins of Gun Control*, 73 Fordham L. Rev. 487 (2004). For a full list of relevant publications over the last decade, see Attachment A.

³ Eric M. Ruben & Darrell A. H. Miller, *Preface: The Second Generation of Second Amendment Law & Policy*, 80 L. & Contemp. Probs. 1 (2017).

this material was largely unavailable to the *Heller* court because the sources were difficult to identify, search, and collect. The creation of powerful searchable digital “virtual” archives has transformed this sub-field and facilitated a more sophisticated understanding of the scope of gun regulation under Anglo-American law.

Many gun-rights advocates and legal scholars writing about the Second Amendment have not made use of these new sources and have ignored relevant scholarship in other fields of legal and constitutional history, particularly the history of criminal law in the Anglo-American world. Unfortunately, litigation continues to rely heavily on claims that have not been properly vetted by serious scholars and that do not meet the minimum standards set by professional legal historians.⁴ Serious historical inquiry requires using the best methods available and the most reliable and extensive body of primary sources.⁵ Only after dispassionately weighing an extensive body of evidence and exhaustively surveying the most recent scholarship can an expert offer an informed scholarly assessment. A characterization of “history” that is not the result of such rigorous analysis is often pseudo-historical and should be approached with considerable skepticism.

The Limited Scope of the Pre-Existing English Right to Have Arms and Travel Armed

Modern scholarship suggests that English law before the Founding permitted only a limited right to have arms and travel armed.⁶ Under English law, the monarchy and the English

⁴ A good illustration of this problem is the unfounded claim that the Statute of Northampton only prohibited traveling with armor and did not prohibit arms. See, e.g., Clayton E. Cramer, *The Statute of Northampton (1328) and Prohibitions on the Carrying of Arms* (Sept. 19, 2015) (unpublished manuscript) <http://dx.doi.org/10.2139/ssrn.2662910>; Richard Gardiner, *The Meaning of 'Going Armed' in the 1328 English Statute of Northampton* (July 12, 2021), <http://dx.doi.org/10.2139/ssrn.3885061>. Unfortunately, self-posted and unreviewed works on SSRN have begun to be treated as authority by legal scholars and some courts. SSRN postings range in quality from material that is little better than Wikipedia to published essays that have appeared in leading scholarly venues.

⁵ For a discussion of the minimum standard for undergraduate history majors, see Mary Lynn Rampolla, *A Pocket Guide to Writing in History* 18 (8th ed. 2015), and Martha Howell & Walter Prevenier, *From Reliable Sources: An Introduction to Historical Methods* 128 (2001). On the methods of professional legal history, see generally *The Oxford Handbook of Legal History* (Markus Dirk Dubber & Christopher L. Tomlins eds., 2018).

⁶ Lois Schwoerer, *Gun Culture in Early Modern England 169–70* (2016); Priya Satia, *Who Had Guns in Eighteenth Century Britain?*, in *A Right to Bear Arms?: The Contested Role of History in Contemporary Debates on the Second Amendment* 37 (Jennifer Tucker et al. eds., 2019) (hereinafter Satia, *Who Had Guns?*). The only English historian who continues to adhere to this interpretation, Joyce Lee Malcolm, holds an NRA-funded chair at George Mason Law School, and her work on this topic has been largely discredited. See, e.g., Priya Satia, *On Gun Laws, We Must Get the History Right*, Slate (Oct. 21, 2015, 9:34 AM),

state enjoyed a monopoly on violence. Any arming—outside of a clear list of exceptions—was an encroachment on royal power and a violation of English law.⁷ The claim that ordinary subjects had a right to travel armed would be legally incoherent under English theories of sovereignty and law. As Sir William Blackstone’s *Commentaries* reminded its readers: “all offenses are either against the King’s Peace or his crown and dignity.”⁸ Therefore, it followed that any “affront to that power, and breaches of those rights, are immediate offenses against [the King].”⁹ Traveling armed was such an affront and was only justified in a limited set of circumstances.¹⁰

A key piece of legislation to enforce the King’s Peace was the Statute of Northampton, which prohibited appearing armed before representatives of the King’s authority and expressly banned traveling armed at “Fairs, Markets, or elsewhere.”¹¹ Thus, the basic legal framework of English law created by the Statute of Northampton and applied by conservators of the peace in

http://www.slate.com/articles/news_and_politics/jurisprudence/2015/10/wrenn_v_d_c_gun_case_turns_on_english_laws_of_1328_and_1689.html (a British historian from Stanford describing Malcolm’s gun rights interpretation as conjured “out of thin air”); see also Tim Harris, *The Right to Bear Arms in English and Irish Historical Context, in A Right to Bear Arms?: The Contested Role of History in Contemporary Debates on the Second Amendment* 1, 23 (Jennifer Tucker et al. eds., 2019) (“The Glorious Revolution has been extensively studied and debated ever since it occurred, yet until the work of Joyce Lee Malcolm, no historian had ever sought to argue that one of its most significant accomplishments was to establish a new right for Protestants to bear arms.”).

⁷ See 1 William Blackstone, *Commentaries* *258, *338. For an elaboration of the common law framework described by Blackstone, see 1 William Hawkins, *A Treatise of the Pleas of the Crown* 135–36 (Eliz. Nutt 1716). This was the conclusion of the Chief Justice of the King’s Bench who wrote that, “It is likewise a great offence at the *common law*, [traveling armed] as if the King were not able or willing to protect his subjects.” *Sir John Knight’s Case* (1686), 87 Eng. Rep. 75 (K.B.) 1686. Arms were typically described as offensive, edged weapons and firearms, and defensive weapons, armor or shields. The suggestion made by some gun-rights advocates that the limits on armed travel only applied to armor and not to offensive weapons is contradicted by the clear exposition of the meaning of these terms in legal dictionaries popular in the Founding era. See Giles Jacob, *A New Law Dictionary* (6th ed. 1750) (entry under “Armour and Arms,”) and the discussion *infra* note 14.

⁸ 1 Blackstone, *Commentaries* *258.

⁹ *Sir John Knight’s Case* (1686) 87 Eng. Rep. 75 (KB) (“It is likewise a great offence at the *common law*, [traveling armed] as if the King were not able or willing to protect his subjects.”)

¹⁰ *Id.*

¹¹ 2 Edw. 3 c. 3 (1328), reprinted in 1 *The Statutes of the Realm* 258 (1828). On the importance of the Statute of Northampton to maintain the peace, see J. Musson, *Sub-Keepers and Constables: The Role of Local Officials in Keeping the Peace in Fourteenth-Century England*, 117 Eng. Hist. Rev. 1 (2002).

the centuries after it was enacted clearly excluded firearms from both sensitive places such as courts and crowded public spaces such as fairs and markets. The Statute also recognized the common law crime of “affray” as a separate violation of the King’s Peace because traveling armed created an asymmetry of power between the armed individual and a law-abiding subject who followed the prohibition on traveling armed. This asymmetry was the source of the terror that violated the King’s Peace. There was no subjective requirement that one establish an intent to terrify or that the action cause a public panic. Simply arming, outside of the recognized legal exceptions, was a violation of the peace.¹²

Michael Dalton, the author of one of the most popular justice of the peace manuals in the eighteenth-century, summarized the orthodox legal view of the Statute of Northampton in the following manner: “All such as shall go or ride armed (offensively) in Fairs, Markets, or elsewhere; or shall wear or carry any guns, dags [sic] or pistols charged . . . any Constable, seeing this, may arrest them, and may carry them before the Justice of the Peace, and the Justice may bind them to the peace.”¹³ Although modern law approaches issues of criminal intent from a subjective psychological understanding, early modern English law adopted an objective view of criminality: the requisite *mens rea* needed to establish the commission of a crime could be deduced from the illegal action itself.¹⁴ Furthermore, under English law firearms were always considered as offensive weapons independent of any intent or action. Defensive weapons were a different class of arms and included armor and shields.¹⁵

¹² J.P. Gent, *A New Guide for Constables, Head-Boroughs, Tythingmen, Churchwardens* 13 (1705); 4 Blackstone, *Commentaries* *148–*49 (1803). Under common law the requisite criminal intent at this period of English history “was presumed from the performance of the unlawful act.” Guyora Binder, *Criminal Law* 140–41 (2016).

¹³ Michael Dalton, *The Country Justice, Containing the Practice of the Justices of the Peace Out of Their Sessions* 264 (1618). Under English law firearms were always treated as offensive weapons, but the law also acknowledged that even ordinary objects could in some circumstances be used as offensive weapons. See Hawkins, *supra* note 7 at 227.

¹⁴ For additional analysis of criminal *mens rea* in this period of Anglo-American law, including Blackstone’s conception of this idea, see Simon Stern, *Blackstone’s Criminal Law: Common-Law Harmonization and Legislative Reform, in Foundational Texts in Modern Criminal Law* 61 (Markus D. Dubber ed., 2014).

¹⁵ Although a firearm was always an offensive weapon under English law, other items in certain circumstances could be treated as offensive arms. *The Complete Dictionary of Arts and Sciences* (1764) defined firearms as the quintessential offensive weapons in the eyes of the law: “GUN, fire-arm, a weapon of offense. . . .” Defensive weapons included shields and armor. See Charles James, *A New and Enlarged Military Dictionary* (1805) (entry under “Arms.”)

There were a small number of well-recognized exemptions to the general ban on armed travel embodied in the Statute of Northampton.¹⁶ These exceptions aimed to facilitate community-based forms of law enforcement which preserved the King's Peace. Accordingly, one might arm oneself to put down riots, rebellions, or join the "hue and cry." Traditionally, the arms used to meet the public responsibility to meet one's obligation to the crown were determined by socio-economic class status so that during much of this period ownership of firearms was limited to members of the gentry elite.¹⁷

The notion that the Statute of Northampton was limited only to "punish people who go armed to terrify the King's subjects" is mistaken because it applies an anachronistic understanding of criminal law. The mere act of traveling armed was the source of the terror because it violated the peace. *Sir John Knight's Case*, the most significant legal interpretation of the Statute, makes this point clearly when it is read in context and the appropriate historical legal principles to the time are applied. Unfortunately, the case has been misinterpreted by gun-rights advocates to support the anachronistic claim that peaceable armed travel was permissible under English common law.¹⁸ As the distinguished British historian Tim Harris has conclusively demonstrated, such a discredited ahistorical interpretation rests on serious interpretive errors and tendentious ideological distortions of the historical record.¹⁹ *Sir John Knight's Case* stands for the opposite proposition.²⁰

¹⁶ William Hawkins, *A Summary of the Crown-Law by Way of Abridgment of Serjeant Hawkins's Pleas of the Crown* 155–63 (1728).

¹⁷ Traditionally, the arms used to meet this public responsibility were determined by social position so that during much of this period ownership of firearms was limited to members of the gentry elite. See Henry Summerson, *The Enforcement of the Statute of Winchester 1285–1327*, 13 J. Legal Hist. 232 (1992). On gun ownership in England during this period, see Kevin M. Sweeney, *Firearms Ownership and Militias in Seventeenth and Eighteenth Century England and America, in A Right to Bear Arms?*, *supra* note 6.

¹⁸ See, e.g., Eugene Volokh, *The First and Second Amendments*, 109 Colum. L. Rev. Sidebar 97, 101 (erroneously arguing that the Statute of Northampton only forbade the carrying of arms when it was "unusual and therefore terrifying."). For additional discussion that is better historically informed, see Mark Anthony Frassetto, *To the Terror of the People: Public Disorder Crimes and the Original Public Understanding of the Second Amendment*, 43 S. Ill. U. L.J. 61, 79 (2018).

¹⁹ The idea of unfettered peaceable public carry is a modern invention of the gun rights movement. For a discussion of how this invented tradition was introduced into legal scholarship, see Patrick J. Charles, *The Invention of the Right to 'Peaceable Carry' in Modern Second Amendment Scholarship*, 2021 U. Ill. L. Rev. Online 195 (hereinafter Charles, *The Invention of the Right to 'Peaceable Carry'*).

²⁰ (1686) 87 Eng. Rep. 75 (KB 101 (2009)).

First, the reference to the Statute of Northampton having gone into “desuetude” in the Lord Chief Justice’s opinion reflected not an understanding that there was a broad-based individual right to carry arms openly, but a legally recognized, class-based privilege, an exception enjoyed by members of the gentry elite. Members of the English gentry, not ordinary subjects, enjoyed a class privilege to travel armed in a manner appropriate to their station in life. Giles Jacob, perhaps the most prolific author of popular legal guidebooks in the Anglo-American world, including an influential legal dictionary, made this point clear. It is worth quoting the passage in full since it offers a concise statement of English law: “By the common law it is an Offense for Persons to go or ride armed with dangerous and unusual Weapons; But Gentlemen may wear common Armour according to their Quality.”²¹ Jacob went on to underscore the most basic principle at the core of English law: “The King may prohibit Force of Arms, and punish Offenders according to Law.”²² The idea of a right to peaceable travel would contravene the King’s right to prohibit travel with force of arms. Individuals had no such right under common law.

Second, the fact that the Court emphasized Knight’s evil intent (“*in malo animo*”) did not mean that evil intent was a necessary element to violate the Statute of Northampton, and that ordinary individuals without evil intent could otherwise openly carry weapons. Once again, Harris offers the most historically accurate account of the case:

[A]s the presiding judge at Knight’s trial, Lord Chief Justice Herbert, observed, the statute had almost gone into desuetude, and there was “now ... a general Connivance to *Gentlemen to ride armed for their Security*.” Herbert felt it necessary to show that Knight had acted *mal animo* (with evil intent) for his alleged offense to come within the terms of the act, though significantly, he insisted that the things of which Knight stood accused were already offenses at common law.²³ [*emphasis added*]

The Chief Justice wrote that the prosecution should have charged Knight for a crime at common law which would have been a better legal strategy to bring him to justice than an indictment under the Statute of Northampton. It is true that Knight’s jury refused to convict him

²¹ See Jacob, *supra* note 7.

²² *Id.*

²³ Harris, *supra* note 6 at 23.

of violating that statute, but Harris and others have interpreted this outcome as a politically motivated act of jury nullification, not an affirmation of a recognized English legal principle.²⁴ The jury likely refused to convict because of its political sympathies. The case reflected the bitter political and religious conflicts England experienced in the years immediately before the Glorious Revolution.²⁵ Knight had stoked anti-Catholic feeling in the city of Bristol and the local jury, sharing his prejudices, refused to convict him.²⁶ Conspiracy theories involving Catholic plots were rife in this period of English history.²⁷ Yet, despite being acquitted by a sympathetic jury who shared Knight's political and religious leanings, the Chief Justice bound Knight over with a peace bond, the only punishment available under law given the jury's decision.²⁸ Furthermore, the Chief Justice averred that Knight's actions were *per se* a violation of the King's Peace. Under English law, the monarchy enjoyed a monopoly of violence and any use of arms outside of a clear list of recognized exceptions was a challenge to the monarchy's sovereignty.²⁹ *Knight's Case* does not support the notion that a robust right to peaceable carry of firearms existed under English law; rather, it contradicts this claim.

The principle that the English State (whether represented by agents of the King or individuals acting in accord with acts of Parliament) could control every aspect of the ownership and use of firearms, including the open carry of firearms, was later reaffirmed by the language employed in the English Declaration of Rights (1688), which stated “[t]hat the subjects which are Protestants may have arms for their defence suitable to their conditions and as allowed by law.”³⁰ Rather than entrench a strong rights claim, this act reaffirmed Parliament's plenary

²⁴ See *Sir John Knights Case* (1686) 87 Eng. Rep. 75 (KB) 1686. For an excellent summary of the political climate in England during the era of the Glorious Revolution, see Tim Harris, *James II, the Glorious Revolution, and the Destiny of Britain*, 51 *Hist. J.* 763, 768 (2008).

²⁵ On the difference between the common law crime of affray and the specific prohibitions in the Statute of Northampton, see 4 Blackstone, *Commentaries* *184.

²⁶ Tim Harris, *The Right to Bear Arms in English and Irish Historical Context*, in *A Right to Bear Arms?*, *supra* note 6, at 23.

²⁷ *Id.*

²⁸ *Id.*

²⁹ (1686) 87 Eng. Rep. 75 (KB).

³⁰ 1 W. & M. 2d. sess, c. 2 (1689); see also 1 Blackstone, *Commentaries* *139.

power to regulate in this area.³¹ Parliament's power over the regulation of arms was not restrained by the act, and efforts to secure a general free standing right for a subject to have arms in their homes for reasons of self-defense were rebuffed at this time as a threat to public order and safety.³² In short, despite tendentious efforts to read the act as a gun rights provision, virtually every English historian views the act as an affirmation of legislative power to regulate arms. Indeed, as historian Tim Harris notes: "The Glorious Revolution has been extensively studied and debated ever since it occurred, yet until the work of Joyce Lee Malcolm, no historian had ever sought to argue that one of its most significant accomplishments was to establish a new right for Protestants to bear arms."³³

In sum, there is no compelling historical evidence that there was ever a general free-standing right to armed travel for ordinary Britons; rather, the general rule was that open carry and concealed carry of firearms was prohibited, with a class-based exception for the political and economic elite.

³¹ Tim Harris, *Revolution: The Great Crisis of the British Monarchy, 1685–1720* 343 (2006) ("It has been claimed that the Declaration of Rights established a new right to bear arms. In fact, clause seven does not use the term 'right' and seems to clearly state that no new legal privilege is being granted here. It explicitly confirms existing limitations on who could possess arms and, if anything, should more accurately be seen as a gun-control measure.")

³² On the plenary power of Parliament during this period, see David J. Lieberman, *The Province of Legislation Determined* (1989); see also John Phillip Reid, *In Our Contracted Sphere: The Constitutional Contract, the Stamp Act Crisis, and the Coming of the American Revolution*, 76 Colum. L. Rev. 21 (1976); Lois G. Schwoerer, *To Hold and Bear Arms: The English Perspective*, 76 Chi. Kent L. Rev. 27, 35 (2000) (discussing the failed effort to amend the game laws to allow subjects to keep arms). English courts eventually reinterpreted the game laws to allow guns in the home in a series of cases in the middle of the eighteenth century. These decisions occurred fifty years after the adoption of the English Bill of Rights. See *R v. Gardner* (1739) 93 Eng. Rep. 1056 (KB); *Wingfield v. Stratford* (1752) 96 Eng. Rep. 787 (KB).

³³ Malcolm posited that arms possession and carrying was a fundamental right that Americans inherited from England. Joyce Lee Malcolm, *The Right of the People to Keep and Bear Arms: The Common Law Tradition*, 10 Hastings. Const. L.Q. 285 (1983). Yet neither the sources cited by Malcolm nor recent historical scholarship support her account of the English past. See, e.g., Patrick J. Charles, *The Second Amendment in Historiographical Crisis: Why the Supreme Court Must Reevaluate the Embarrassing "Standard Model" Moving Forward*, 39 Fordham Urb. L.J. 1727, 1795 (2012) (describing how gun-rights advocates, supporters of the so-called Standard Model, "fell into line as they imported Malcolm's research and conclusions into their own writings"). For works challenging Malcolm's claims about gun ownership and usage in England, see Lois G. Schwoerer, *Gun Culture in Early Modern England 169–70* (2016); Satia, *Who Had Guns?*, *supra* note 6 at 37.

The Absorption and Transformation of the Common Law in Early America

The strong continuities between earlier English law and colonial American law on the issue of public carry are evident in the extant sources from early America.³⁴ To be sure, living on the edge of the British empire, facing French and Spanish imperial power on its borders, and dealing with an almost constant state of war with Indian tribes, Americans were far better armed than their English brethren. In some instances, colonies required individuals to arm themselves in other circumstances, including church going and when working beyond the fortified stockades that protected the early settlements of colonial America. Few of these provisions were carried forward after the American Revolution.³⁵

The militia was far more important in the colonies given the needs of public defense. Apart from Quaker Pennsylvania, every colony required a broad swath of the free white male adult population to submit to militia training and participate in a well-regulated militia. Yet, militia obligations did not create a modern-style rights claim that could be asserted against early American governments; it imposed a legal obligation on the King's subjects. Under English law, all subjects were obligated to assist agents of the King to put down rebellions and enforce the peace. This obligation did not create a right to own or carry a weapon, but simply meant that individuals had to appear with whatever weapons they were legally entitled to possess under English law. In the colonies, the standard militia weapon was a musket. For most English subjects outside of the colonies, this obligation would not have created a right to firearms, which were prohibited to all but the gentry elite.³⁶

³⁴ Saul Cornell, *The Right to Keep and Carry Arms in Anglo-American Law: Preserving Liberty and Keeping the Peace*, 80 L. & Contemp. Probs. 11 (2017) (hereinafter Cornell, *The Right to Keep and Carry Arms*); Joseph Blocher & Darrell H. Miller, *The Positive Second Amendment: Rights, Regulation, and the Future of Heller* 100–17 (2018).

³⁵ As historian David Konig observed, laws compelling private citizens to carry arms to church and other similar enactments were more common during the colonial era and fell out of favor after Independence. See David T. Konig, *Arms and the Man: What Did the Right to Keep Arms Mean in the Early Republic* 5 L. & Hist. Rev. 177 (2007). During the era of the Fourteenth Amendment, states began expressly prohibiting arms in places where people gathered, including places of worship. See George Washington Paschal, 2 *A Digest of the Laws of Texas: Containing Laws in Force, and the Repealed Laws on Which Rights Rest. Carefully Annotated* 1322 (3d ed.1873); Leander G. Pitman et al., *The Statutes of Oklahoma, 1890*, 496 (1891).

³⁶ In colonial America, firearms ownership was mandated by law for the segment of the population required to bear arms. See Cornell, *The Right to Keep and Carry Arms* *supra* note 34. But the imposition of a militia obligation does not create a right. This legal confusion is pervasive in discussion of minors and the right to bear arms. See, e.g., David B. Kopel & Joseph G.S. Greenlee, *The Second Amendment Rights of Young Adults*, 43 S. Ill. U. L.J. 495

A good illustration of how the Statute of Northampton and common limits on armed travel were understood in colonial America are evidenced in a popular early American Justice of the Peace manual published just before the American Revolution. Echoing earlier English writers, the prohibition on armed travel in public was summarized as follows:

Justices of the Peace, upon their own View, or upon Complaint, may apprehend any Person who shall go or ride armed with unusual and offensive weapons, in an Affray, or among any great Concourse of the People, or who shall appear, so armed, before the King's Justices sitting in Court.³⁷

Contrary to the claims of many gun-rights advocates, widespread open carry was not the norm in the era of the Second Amendment and the early Republic.³⁸ The fact that some of the individual state constitutions and the Second Amendment protected arms bearing tells us little about armed travel in public outside of the context of militia service and musters. Indeed, states regulated the public carry of arms even in the context of militia service, banning the firing of guns, and in some instances prohibiting traveling to and from muster with a loaded weapon.³⁹

In 1795, Massachusetts enacted its own version of the Statute of Northampton using language drawn from prior English commentators. The law forbade anyone who “shall ride or go armed offensively, to the fear or terror of the good citizens of this Commonwealth.”⁴⁰ This was a common gloss on the Statute of Northampton used in many of the popular English Justice of the

(2019). Simply put, rights and duties are not the same. Modern constitutional theory typically treats them as correlatives, not synonyms. Accordingly, while the existence of a right may impose a duty on *another* legal actor (such as a duty to refrain from interfering with the right), *duties* do not automatically confer individual *rights* and did not do so on those who were required by law to participate in the militia.

³⁷ James Davis, *The Office and Authority of a Justice of the Peace* 13 (1774) (citing Dalton, *supra* note 13, at 37). Fairs and markets were centers of commerce and were typically the location for the placement of important public announcements, facts which mark them as almost the antithesis of “sensitive places.” The proper analogy to sensitive places would be the prohibition on coming armed before the King’s servants and courts. See Chris R. Kyle, *Monarch and Marketplace: Proclamations as News in Early Modern England* 78 *Huntington Libr. Q.* 771 (2015).

³⁸ For a recent effort to support this dubious claim, see David B. Kopel and George A. Mocsary, *Errors of Omission: Words Missing from the Ninth Circuit’s Young v. State of Hawaii*, 2021 *U. Ill. L. Rev. Online* 172. For a critique of this argument, see Charles, *The Invention of the Right to ‘Peaceable Carry’* *supra* note 19.

³⁹ Saul Cornell, *The Right to Carry Firearms Outside of the Home: Separating Historical Myths from Historical Realities*, 39 *Fordham Urb. L.J.* 1695 (2012).

⁴⁰ Asahel Stearns & Lemuel Shaw, *The General Laws of Massachusetts* 454 (Theron Metcalf ed., 1823).

Peace manuals of the previous century. It framed the prohibition in terms of traveling with offensive weapons. The mere act of traveling armed with offensive weapons demonstrated the evil intent required by law and caused the terror the law prohibited. Both the term “armed offensively” and the phrase “fear or terror of the good citizens” tracked closely the traditional common law usage of these terms.⁴¹

The terror requirement under Anglo-American law has often been read with a modern bias, leading some to assert, erroneously, that only action with specific evil intent was prohibited. This reading is neither consistent with the text of the Statute of Northampton nor later American variants of it. When read in the context of criminal law norms appropriate to the eighteenth century, the meaning of this legal term of art does not support the modern subjective psychological model of *mens rea* and its focus on actual intent. The notion of intent undergirding criminal law in this period was objective, not subjective. Intent was inferred from the illegal act. These were crimes against the peace and as such the mere act of arming was the cause of the terror.⁴²

A key to understanding how Anglo-American law understood the meaning of offensive travel and affray may be gleaned from an influential 1689 Justice of the Peace manual, authored by Joseph Keble. Written in the era of the Glorious Revolution, it offered a lucid account of why armed travel violated the King’s peace irrespective of any specific malicious intent: “Yet may an Affray be, without word or blow given; as if a man shall shew himself furnished with Armour or Weapon which is not usually worn, it will strike a fear upon others that be not armed as he is; and therefore both the Statutes of Northampton made against wearing Armour, do speak of it.”⁴³

⁴¹ See George Fletcher, *Rethinking Criminal Law* 208 (1978); Binder, *supra* note 12, at 139–42. Many discussions of the terror requirement read backward from the 19th century subjective standard. See, e.g., Volokh, *supra* note 18, at 101 (erroneously taking the holding in *State v. Huntley*, 25 N.C. 418, 423 (1843) as dispositive of Anglo-American criminal law assumptions from preceding centuries, using a method that essentially reads history backwards).

⁴² See, e.g., Binder, *supra* note 12, at 140–41.

⁴³ Joseph Keble, *An Assistance to Justices of the Peace, for the Easier Performance of Their Duty* 147, 224 (1683).

In short, apart from recognized exceptions, armed travel in populous areas was *per se* a violation of the peace under Anglo-American law.⁴⁴

Gun Regulation in the North and South in Antebellum America

The genius of the common law was its adaptability, and its absorption in America proved no exception to this general pattern. Following the Founding era, early American firearms law evolved differently in each of the newly independent states, but important regional patterns also emerged.⁴⁵ Southern slavery was an important contributing factor to this process of regional differentiation. Indeed, many gun-rights advocates focus primarily on a string of Southern cases decided by slave-holding judges to ascertain the public meaning of the right to bear arms. Yet there is broad agreement among historians of early American law that generalizing from a single region's experiences ignores the diversity of early American law.⁴⁶

The Southern tradition has figured prominently in post-*Heller* scholarship and law, but despite this fact, there remains considerable confusion about what this tradition embodied. The distortion of Southern jurisprudence remains one of the most pervasive problems in post-*Heller* jurisprudence.⁴⁷ In the slave South a more expansive view of open carry developed, while prohibitions on concealed carry, a dastardly and cowardly practice to most Americans in antebellum America, posed no constitutional problems. In Massachusetts, a different model emerged and gained judicial notice. This model also expanded the scope of self-defense and gun rights beyond the narrow confines of English common law, but it did so in a more narrowly

⁴⁴ For a good illustration of the persistence of this understanding of the law, see Samuel Freeman, *The Massachusetts Justice* 149 (1795). The realities of life in early America, low population density, an agrarian economy, and almost incessant warfare with the tribal populations of the eastern United States meant that there were many more situations in which Americans would have carried arms in public, but these conditions did not change the continuing importance of traditional limits on armed travel in populous areas. See Cornell, *The Right to Keep and Carry Arms*, *supra* note 34.

⁴⁵ Saul Cornell and Nathan DeDino, *A Well Regulated Right: The Early American Origins of Gun Control*, 73 *Fordham L. Rev.* 487 (2004).

⁴⁶ On the importance of early American regional differences in the evolution of the common law, see Ellen Holmes Pearson, *Remaking Custom: Law and Identity in the Early American Republic* (2011) (arguing that the American colonists adapted English common law to their local conditions and that to understand the evolution of common law in America we must recognize that it evolved among multiple paths of development) and Lauren Benton & Kathryn Walker, *Law for the Empire: The Common Law in Colonial America and the Problem of Legal Diversity*, 89 *Chi.-Kent L. Rev.* 937 (2014).

⁴⁷ Michael O'Shea, *Modeling the Second Amendment Right to Carry Arms (I): Judicial Tradition and the Scope of "Bearing Arms" for Self-Defense*, 61 *Am. U. L. Rev.* 585 (2012).

tailored fashion than the Southern model. Thus, pre-Civil War American firearms law did not speak with a single voice on firearms; rather, antebellum American law spoke with a different and distinctive regional accent.⁴⁸

Unfortunately, the antebellum Southern cases cited in *Heller* have consistently been misinterpreted by gun-rights advocates. Understanding this body of law requires a deep immersion in the culture of antebellum jurisprudence. This line of cases was shaped by the emerging police power jurisprudence that was developed by the Marshall Court and various state judges.⁴⁹ The failure to appreciate the relevance of this tradition is understandable given the fact that much legal scholarship on the police power typically focuses on Reconstruction, particularly on doctrinal developments in police power jurisprudence following the *Slaughterhouse Cases* and leading up to *Lochner*.⁵⁰ Yet what has been lost in this approach to the history of the police power is the recognition that the right of the people to regulate their internal police was central to Founding era constitutional thought, a direct outgrowth of the theory of popular sovereignty at the core of American constitutionalism. Given this fact, the texts of the first state constitutions clearly articulated—alongside more familiar rights such as the right to bear arms—a right of the people to regulate their internal police.

Indeed, under *Heller*'s own framework, the right to regulate is central to interpreting the scope of the right to keep and bear arms. “Constitutional Rights,” Justice Scalia wrote in *Heller*,

⁴⁸ Young v. Hawaii: *Ninth Circuit Panel Holds Open-Carry Law Infringes Core Right to Bear Arms in Public*, 132 Harv. L. Rev. 2066, 2070–71 (2019) (discussing the emerging scholarly consensus that history supports “restrictions on concealed and open carry that enjoyed “widespread acceptance” in many states.); James E. Fleming & Linda C. McClain, *Ordered Gun Liberty: Rights with Responsibilities and Regulation* 94 Boston Univ. L. Rev. 849 (2014).

⁴⁹ On *Heller*'s heavy reliance on antebellum Southern case law, see generally Eric M. Ruben & Saul Cornell, *Firearm Regionalism and Public Carry: Placing Southern Antebellum Case Law in Context*, 125 Yale L.J. F. 121 (2015).

⁵⁰ See generally *Slaughter-House Cases*, 83 U.S. 36 (1872). The Founding era's conception of “police” was rooted in popular sovereignty and was seen as necessary to the preservation of rights. See Jonathan Gienapp, *The Foreign Founding: Rights, Fixity, and the Original Constitution*, 97 Tex. L. Rev. Online 115 (2019); Jud Campbell, *Judicial Review and the Enumeration of Rights*, 15 Geo. J.L. & Pub. Pol'y 569 (2017). Gun rights advocates have turned this historical understanding on its head, arguing that the police power stands in tension with the concept of rights. See Randy E. Barnett & Evan D. Bernick, *No Arbitrary Power: An Originalist Theory of the Due Process of Law*, 60 Wm. & Mary L. Rev. 1599, 1663–66 (2019).

“are enshrined with the scope they were thought to have when the people adopted them.”⁵¹ This would apply with equal force to the right of the people to regulate the internal police of a state as much as it applies to the right to bear arms. Antebellum jurists understood this vital point, and the concept of police power was part of their effort to frame a coherent jurisprudence that addressed the need for the police power in America’s rapidly changing society and economy. The first modern-style gun control laws aimed at limiting the access and use of handguns emerged during the period of the market revolution, when American industry mass produced not only wooden clocks and Currier and Ives prints, but reliable and cheap handguns. Courts seeking to interpret these laws and address unprecedented threats posed by easily concealed weapons turned to the emerging body of police power jurisprudence to sort the rival claims of those seeking tighter regulations of guns from those opposed to such policies. Understanding the police power is therefore essential to make sense of the antebellum cases *Heller* treats as probative of the Second Amendment’s meaning.⁵²

Although the concept of a “police right” did not disappear from American law in the years before the Civil War, this legal concept was slowly overshadowed by an evolving jurisprudence focused on police power.⁵³ Antebellum jurists developed this body of law to address the complex issues that regulation posed for a rapidly changing society—and no issue was more vexing than firearms regulation. Indeed, the application of the police power to regulating firearms and ammunition was singled out as the *locus classicus* of state police power by Chief Justice John Marshall in *Brown v. Maryland*, in which the Court observed that “[t]he power to direct the removal of gunpowder is a branch of the police power.”⁵⁴ The scope of the

⁵¹ *District of Columbia v. Heller*, 554 U.S. 570, 684 (2008).

⁵² Post-*Heller* scholarship generally has not examined this important element of antebellum jurisprudence. For a notable exception to this general silence, see generally Jud Campbell, *Natural Rights, Positive Rights, and the Right to Keep and Bear Arms*, 32 L. & Contemp. Probs. 31 (2020). Campbell’s essay is paradigm shifting, recasting the entire debate over the Second Amendment in terms that genuinely reflect the distinctive and radically different way Founding era law conceptualized the problem of rights and regulation. For an effort to expand upon Campbell’s important insight, see Saul Cornell, *The Police Power and the Authority to Regulate Firearms in Early America*, Brennan Center for Justice (June 2021) https://www.brennancenter.org/sites/default/files/2021-06/Cornell_final.pdf.

⁵³ See generally Aaron T. Knapp, *The Judicialization of Police*, 2 Critical Analysis L. 64 (2015); Christopher Tomlins, *Necessities of State: Police, Sovereignty, and the Constitution*, 20 J. of Pol’y Hist. 47 (2008); Cornell and Leonard, *supra* note 2.

⁵⁴ 25 U.S. 419, 442–43 (1827); see generally *License Cases*, 46 U.S. 504 (1847).

police power was later analyzed by the Supreme Court in the *License Cases*, where Justice John McClean formulated this guiding principle: “It is not susceptible of an exact limitation but must be exercised under the changing exigencies of society. In the progress of population, of wealth, and of civilization, new and vicious indulgences spring up, which require restraints that can only be imposed by new legislative power. When this power shall be exerted, how far it shall be carried, and where it shall cease, must mainly depend upon the evil to be remedied.”⁵⁵ The police power—in particular, the right of the people to regulate themselves in the interest of public safety—was thus dynamic, adaptable to the changing needs of American society.

One case featured in *Heller*, *State v. Reid* offers an excellent illustration of the way police power jurisprudence was used by antebellum judges to adjudicate claims about gun rights and the right of the people to regulate.⁵⁶ The *Reid* Court observed that the state’s concealed carry prohibition was a legitimate exercise of police power authority. “The terms in which this provision is phrased,” the court noted, “leave with the Legislature the authority to adopt such regulations of police, as may be dictated by the safety of the people and the advancement of public morals.”⁵⁷

State v. Reid relied on the emerging body of police power jurisprudence that Marshall and others pioneered. When ripped out of context, *Reid* might seem to support a modern-type permissive conception of public carry, but when read closely and in the context of antebellum police power jurisprudence, the case supports the opposite conclusion. *Reid* does not vindicate a permissive conception of the right to carry in public; rather, it forcefully articulates a more limited notion of purposive carry. In short, to justify arming in public, one had to have good cause—a specified reason to do so. This requirement applied to open carry as much as it applied to concealed carry. Most public carry cases in the antebellum South, apart from rare outlier decisions, such as *Bliss v. Commonwealth*, adopted this approach to firearms regulation.⁵⁸

⁵⁵ *License Cases*, 46 U.S. at 592.

⁵⁶ See generally *State v. Reid*, 1 Ala. 612 (1840).

⁵⁷ *Id.* at 616.

⁵⁸ *Bliss v. Commonwealth*, 12 Ky. (2 Litt.) 90 (1822) adopted an absolutist view of the right to bear arms, but the decision was overturned by a revision of the state constitution. For a useful discussion of *Bliss* in terms of the police power, see Ernst Freund, *The Police Power: Public Policy and Constitutional Rights* 91 (1904).

Reid, it is worth recalling, was a case in which a sheriff carried a concealed pistol in violation of Alabama’s prohibition on public carry of arms. The fact that a peace officer was prosecuted for carrying a weapon might seem odd given that police in modern America are typically armed with guns. This was not the case for the first half century after the adoption of the Second Amendment and its state analogues. It is also vital to read *Reid* against the background of an inherited common law tradition. “If the emergency is pressing,” the *Reid* Court declared, “there can be no necessity of concealing the weapon, and if the threatened violence will allow of it, the individual may be arrested and constrained to find sureties to keep the peace, or committed to jail.”⁵⁹ But the *Reid* Court rejected the idea of permissive public carry.⁶⁰ *Reid* acknowledged a fact that many modern gun rights activists and some judges have ignored—the imposition of a peace bond was central to the powers of justices of the peace, constables, and sheriffs, who all continued to function as conservators of the peace under American law. The appropriate legal response to the danger posed by someone traveling armed in public was to impose a peace bond, a surety of the peace. Only if circumstances precluded following this course of action would a sheriff be justified in arming—and in that case, the correct decision was not to carry the weapon concealed but in the open. Thus, the Sheriff-defendant in *Reid* could be prosecuted, the court reasoned, because there was no necessity to arm. If a gun was needed, it should have been carried openly. Thus, the state could not categorically ban open carry in cases where an individual had a specified need for self-defense, but it could limit carry to those with good cause and punish those who carried without good cause.

State v. Huntley, another favorite case of modern gun-rights advocates, adopted a broader conception of the scope of public carry, but it, too, clearly articulated a theory of purposive carry and rejected the ideal of permissive open carry.⁶¹ *Huntley* marked a bolder departure from the

⁵⁹ *Reid*, 1 Ala. at 621.

⁶⁰ *Id.* (noting that the state constitutional right to bear arms “neither expressly nor by implication, denied to the Legislature, the right to enact laws in regard to the manner in which arms shall be borne. The right guaranteed to the citizen, is not to bear arms upon all occasions and in all places”)

⁶¹ *State v. Huntley*, 25 N.C. 418, 423 (1843).

traditional English common law limits on armed travel in public.⁶² Yet even this case drew a sharp distinction between purposive carry and permissive carry. In *Huntley*, the court wrote:

No man amongst us carries [a pistol] about with him, as one of his every day accoutrements — as a part of his dress — and never we trust will the day come when any deadly weapon will be worn or wielded in our peace loving and law-abiding State, as an appendage of manly equipment. But although a gun is an “unusual weapon,” it is to be remembered that the carrying of a gun per se constitutes no offence. For any lawful purpose — either of business or amusement — the citizen is at perfect liberty to carry his gun.⁶³

Carrying weapons for a specified lawful purpose openly was protected; carrying weapons with no specific purpose—*habitual carry*—was not. “Lawful purpose” was defined as a specific activity that merited being armed: hunting, target practice, traveling beyond one’s community, or self-defense in response to a clear and specific threat.⁶⁴ The phrase “business or amusement” was not synonymous with carrying a weapon every day as one might carry a watch, the court observed; it was an action that had to be grounded in some specified reason.⁶⁵ Thus, even in one of the most expansive interpretations of gun rights in the antebellum South, the region of the new nation with the most tolerant view of public carry, the right asserted was purposive in nature and not permissive.

Outside of the antebellum South, a different and more restrictive tradition of regulation took hold. Although this alternative model recognized a more expansive right than under English law, it was more limited than the Southern approach espoused in *Reid* and *Huntley*. First developed in Massachusetts, this approach soon spread to other locations across the nation before

⁶² Ruben and Cornell, *supra* note 49.

⁶³ *Huntley*, 25 N.C. at 423.

⁶⁴ Modern American self-defense law has specified a variety of qualifications limiting the use of deadly force, and thus, this body of law is in tension with the idea of permissive carry championed by gun-rights advocates. This issue has not received sufficient attention by jurists and scholars; for a notable exception to this general scholarly neglect, see Eric Ruben, *An Unstable Core: Self-Defense and the Second Amendment*, 108 Cal. L. Rev. 63 (2020).

⁶⁵ Kopel and Mocsary, *supra* note 38 at 183 (mistakenly claiming that “business or amusement” was a legal term of art that included all lawful activity, but the text of *Huntley* makes clear that wearing a gun habitually without good cause was not lawful).

the Civil War.⁶⁶ Both the Southern purposive model and the new Massachusetts model departed from traditional English common law. The earlier tradition prohibited armed carry outside of a well-defined list of exceptions, mostly situations in which individuals were required by law to assist in keeping the peace. The key innovation in the Massachusetts law was the recognition of a good cause exception that allowed individuals to preemptively arm for reasons of self-defense. Building on developments in American law after the American Revolution, particularly Enlightenment ideas, the new Massachusetts model was a significant expansion of gun rights and embodied a more individualistic conception of the scope of legitimate self-defense. It is important to note that under common law, there was no right to arm oneself preemptively, even in situations where one faced an imminent threat.⁶⁷ The proper response was a peace bond.

The adaptation of the common law in America in both the South and North abandoned some aspects of this model of the peace, but it did not reject every aspect of the older legal framework. This community-based model of policing continued in America until the rise of modern police forces in the nineteenth century. Any justice of the peace could bind an individual to the peace. Similarly, any member of the community who felt threatened could have a justice of the peace impose a surety to conserve the peace. Gun-rights scholars and a few judges have erroneously claimed that a surety required an individual to come forward and that individuals were otherwise free to travel armed in the public square.⁶⁸ What they have ignored is that the powers of the justice of the peace as a conservator of the peace remained unchanged after the American Revolution. As conservators of the peace, justices of the peace, sheriffs, and

⁶⁶ Saul Cornell, *The Right to Carry Firearms Outside of the Home: Separating Historical Myths from Historical Realities*, 39 *Fordham Urb. L.J.* 1695, 1720 & n.134 (2012).

⁶⁷ Cornell, *The Right to Keep and Carry Arms*, *supra* note 34 at 24. The notable exception to this rule was the “castle doctrine” covering deadly force in the home against intruders. *See Semayne’s Case* (1604) 77 Eng. Rep. 194, 195 (KB), and more generally Darrell A. H. Miller, *Self-Defense, Defense of Others, and the State*, 80 *L. & Contemp. Probs.* 85 (2017).

⁶⁸ *See generally* Steve Hindle, *The State and Social Change in Early Modern England 1550–1640* (2000). For unreliable historical accounts that ignore the role of the justice of the peace as conservators of the peace, *see* Kopel and Mocsary, *supra* note 38; *see also* Robert Leider, *Constitutional Liquidation, Surety Laws, and the Right to Bear Arms* 13 (George Mason University Legal Studies Research Paper Series No. LS 21-06, 2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3697761. Leider’s analysis rests on anachronistic interpretations of the evidence and ignores the express statements of leading jurists about the meaning of Massachusetts law. He also reads backwards from post-Civil War developments and imposes those later understandings on antebellum evidence. Finally, Leider ignores the relevant scholarship in the history of criminal law and as a result distorts the norms governing prosecution in pre-Civil War America.

constables maintained their broad powers to enforce the peace, including the power to preemptively disarm, bind over with sureties of the peace or good behavior, and imprison those who violated the prohibition on armed travel.⁶⁹

The claim that in America the peace was not enforced against those traveling armed has also gained some judicial notice, but this, too, rests on dubious historical arguments, mostly inferences from silences in the historical record, including the absence of prosecutions and a body of case law challenging the restrictions. The lack of evidence of prosecutions can support two opposing interpretations: either broad compliance with the law or absence of enforcement. Simply asserting that the silences in the record demonstrate lack of enforcement rests on conjecture and anachronistic assumptions about the way the peace functioned in the early republic.⁷⁰

First, it is important to recognize that records of local justices of the peace, particularly in rural areas, are rare. Evidence about the enforcement of prohibitions on armed carry in urban areas such as Boston, however, are well documented.⁷¹ Arms carrying in New England was far less common than in the slave South, so the absence of prosecution more likely suggests high levels of compliance with the law. Additional confirmation is provided by the practices of the Boston police, who did not routinely carry firearms until the Civil War period. Nor were criminals likely to be armed with guns during this period. Most assaults occurred without weapons.⁷²

Even more problematic for the argument about non-enforcement is the clear exposition of the meaning of the Massachusetts ordinances by the state's leading criminal law expert, the distinguished jurist Peter Oxenbridge Thacher, who described the law in forceful terms: "In our own Commonwealth [of Massachusetts], no person may armed with a dirk, dagger, sword, pistol, or other offensive and dangerous weapon, without reasonable cause to apprehend an assault or

⁶⁹ Laura F. Edwards, *The People and Their Peace: Legal Culture and the Transformation of Inequality in the Post-Revolutionary South* 100 (2009).

⁷⁰ See Kopel and Mocsary, *supra* note 38.

⁷¹ *Annual Report – The Chief of Police* 8–9 (Boston, 1864).

⁷² Roger Lane, *Policing the City: Boston, 1822-1885* 103–04(1967).

violence to his person, family, or property.”⁷³ Thacher’s assessment of his state’s law was echoed by Judge Abel Cushing, who served on the Roxbury Police Court.⁷⁴ Both jurists agree that there was no right of peaceable armed carry outside of situations where one faced a specific threat.

Reconstruction, the Progressive Era, and the Rise of the Modern Regulatory State

The Civil War and post-War developments had a profound impact on gun culture in American and the legal response to the proliferation of arms. Rather than mark an end to robust regulation of public carry, Reconstruction witnessed an intensification of such efforts. Republicans sought to protect the rights of African Americans to bear arms, but were equally insistent on enacting strong racially neutral regulations aimed at public safety.⁷⁵ Indeed, the necessity of racially neutral gun regulations of this sort eventually was recognized by both Republicans and Democrats in Texas, a state in which paramilitary violence threatened public order and post-war stability.⁷⁶ In *English v. State*, the Texas Supreme Court confidently affirmed that restrictions on public carry were “not peculiar to our own State.”⁷⁷ Indeed, it concluded that “it [was] safe to say that almost, if not every one of the States of this union [had] a similar law upon their statute books, and, indeed, so far as we [had] been able to examine them, they [were] more rigorous than the act under consideration.”⁷⁸ Even after the adoption of the Fourteenth Amendment, the court reasoned that good cause laws were entirely consistent with protections

⁷³ Peter Oxenbridge Thacher, Two Charges to the Grand Jury of the County of Suffolk, for the Commonwealth of Massachusetts, at the Opening of the Terms of the Municipal Court of the City of Boston, on Monday, December 5th, A.D. 1836 and on Monday, March 13th, A.D. 27 (1837).

⁷⁴ See also the comments of Judge Abel Cushing, *Arrests for Carrying Concealed Weapons*, *The Liberator*, Apr. 11, 1851, at 59.

⁷⁵ For a discussion of the importance of such broad racially neutral laws aimed at demilitarizing the public sphere, see Darrell A. H. Miller, *Peruta, The Home-Bound Second Amendment, and Fractal Originalism*, 127 *Harv. L. Rev.* F. 238 (2014).

⁷⁶ Mark Anthony Frassetto, *The Law and Politics of Firearms Regulation in Reconstruction Texas*, 4 *Tex. A&M L. Rev.* 95, 113–17 (2016) (hereinafter Frassetto, *The Law and Politics of Firearms Regulation*); Brennan G. Rivas, *An Unequal Right to Bear Arms: State Weapons Laws and White Supremacy in Texas, 1836-1900* 121 *Sw. Hist. Q.* 284 (2020).

⁷⁷ *English v. State* 35 *Tex.* 473, 479 (1871).

⁷⁸ *Id.*

for the right to bear arms.⁷⁹

The most important regulations on public carry were bans on concealed carry. An Evanston, Illinois ordinance was typical: “It shall be unlawful for any person within the limits of the city of Evanston to carry or wear under his clothes or concealed about his person, any pistol, colt or slung shot.”⁸⁰ States in every region of the nation adopted similar bans.⁸¹ Some localities enacted more stringent bans on public carry.⁸² Nashville, Tennessee passed a comprehensive ban on public carry in 1873:

Section 1: That every person found carrying a pistol, bowie-knife, dirk-knife, slung-shot, brass knucks or other deadly weapon, shall be deemed guilty of a misdemeanor, and, upon conviction of such first offense, shall be fined from ten to fifty dollars, at the discretion of the court, but upon conviction of every such subsequent offense, shall be fined fifty dollars; Provided, however, That no ordinary pocket knife and common walking-canes shall be construed to be deadly weapons.⁸³

By the end of the century, Americans residing in urban areas, particularly those dwelling in the nation’s most populous cities, were likely to be living under some form of restrictive public carry legal regime: bans on concealed carry, good cause permit schemes, or broad restrictions on public carry with good cause and affirmative self-defense exceptions.⁸⁴

⁷⁹ For a discussion of this case in the context of Reconstruction, see Frassetto, *The Law and Politics of Firearms Regulation*, supra note 76 at 113–17 (2016).

⁸⁰ George W. Hess, *Revised Ordinances of the City of Evanston: Also Special Laws and Ordinances of General Interest* 131–32 (1893).

⁸¹ 1871 Ky. Acts 89, An Act to Prohibit the Carrying of Concealed Deadly Weapons, ch. 1888, §§ 1-2, 5; 1887 Mich. Pub. Acts 144, An Act to Prevent The Carrying Of Concealed Weapons, And To Provide Punishment Therefor, § 1; 1885 Or. Laws 33, An Act to Prevent Persons from Carrying Concealed Weapons and to Provide for the Punishment of the Same, §§ 1-2.

⁸² Ordinance No. 9: Carrying Deadly Weapons, Jan. 28, 1873, reprinted in *Arizona Citizen*, Feb. 8, 1873, at 2; An Ordinance to Prevent the Carrying of Concealed Weapons, Feb. 4, 1882, reprinted in *The Worthington Advance*, Feb. 9, 1882, at 3; An Ordinance Prohibiting the Unlawful Carrying of Arms, May 4, 1880, reprinted in *Daily Democratic Statesman*, May 9, 1880, at 2.

⁸³ Chapter 108: Carrying Pistols, Bowie-Knives, Etc., Dec. 26, 1873, reprinted in *Ordinances of the City of Nashville, to Which are Prefixed the State Laws Chartering and Relating to the City, with an Appendix* 340–41 (William K. McAlister, Jr. ed., 1881).

⁸⁴ See John Forrest Dillion, *The Right to Keep and Bear Arms for Public and Private Defense*, 1 Cent. L.J. 259 (1874); 3 *The American and English Encyclopedia of Law* 408 (John Houston Merrill et al. eds., 1887). For modern confirmation of these assessments, see Robert J. Spitzer, *Gun Law History in the United States and Second Amendment Rights* 80 L. & Contemp. Probs 55, 68 (2017).

The rise of permit schemes reflected profound changes in both the law and the nature of law enforcement.⁸⁵ The traditional surety model of enforcing the peace was rooted in common law and reflected the realities of life in the early modern Anglo-American world. This approach was well suited to a pre-industrial society in which members of the local gentry elite could count on the mechanisms of deference and a web of patron-client relationships to help them maintain social order.⁸⁶ Slowly over the course of the nineteenth century, as America modernized, urbanized, and became a more diverse and highly mobile society, traditional community-based mechanisms of law enforcement eroded. Sureties were less effective at securing the peace in America's growing metropolitan cities. New institutions and processes were necessary to police large, heterogeneous cities. Professional police forces, special police courts, and new administrative agencies were better suited to maintaining social order and the peace in the urban world of nineteenth-century America.⁸⁷ Thus, by end of the nineteenth century, permit schemes that took advantage of these new institutions and practices had largely supplanted the traditional common law mechanisms of sureties or peace bonds as the dominant method for dealing with the dangers posed by gun violence.

The culmination of this process of enforcing the peace in modern America occurred in the Progressive era with the enactment of New York's Sullivan Law, a comprehensive gun control measure that imposed limits on both the sale and ability to carry arms in public.⁸⁸ The adoption of this law ushered in a wave of similar laws by states and localities.⁸⁹ In contrast to

⁸⁵ On the transformation of American law and the rise of the modern regulatory state, see William J. Novak, *Common Regulation: Legal Origins of State Power in America*, 45 *Hastings L.J.* 1061 (1994); Jed H. Shugerman, *The Legitimacy of Administrative Law*, 50 *Tulsa L. Rev.* 301 (2015); Herbert Hovenkamp, *Appraising the Progressive State* 102 *Iowa L. Rev.* 1063 (2017).

⁸⁶ See Hindle, *supra* note 68, at 100.

⁸⁷ Eric H. Monkkonen, *America Becomes Urban: The Development of U.S. Cities and Towns, 1780-1980* 98–108 (1995).

⁸⁸ For the historical context of the enactment of the Sullivan law, see Alexander Deconde, *Gun Violence in America: The Struggle for Control* (2001).

⁸⁹ 1917 Or. Sess. Laws 804–08, An Act Prohibiting the manufacture, sale, possession, carrying, or use of any blackjack, slungshot, billy, sandclub, sandbag, metal knuckles, dirk, dagger or stiletto, and regulating the carrying and sale of certain firearms, and defining the duties of certain executive officers, and providing penalties for violation of the provisions of this Act, § 1, § 3-A, § 4, § 4-A, § 4-B, § 4-C; 917 Cal. Sess. Laws 221–225, An act relating to and regulating the carrying, possession, sale or other disposition of firearms capable of being concealed upon the person; prohibiting the possession, carrying, manufacturing and sale of certain other dangerous weapons

earlier efforts at regulating public carry that relied on common law tools such as sureties of the peace and good behavior, the new modern regulatory model employed license and permitting schemes, an approach to regulation consistent with other reform efforts during the Progressive era. In addition to limits on pistols, several states enacted new laws banning dangerous and unusual weapons, most notably machines guns and some semi-automatic weapons.⁹⁰

Public Carry Limits in California in the Era of the Fourteenth Amendment

California embraced the new model of gun regulation. Although a potent mythology about guns in the American West has defined popular culture since the region was settled, the historical reality is far more complex than dime novels and Hollywood movies suggest.⁹¹ Guns were an important part of the western experience, but the region also enacted some of the most robust firearms regulations in American history.⁹² California was no exception to this general pattern.⁹³

The law adopted by Los Angeles illustrates the region's commitment to enacting broad gun regulations. The ordinance adopted was comprehensive in scope, and it prohibited public carry, "concealed or otherwise." It also gave the Mayor some discretion in prosecuting violators, although it did not establish a formal permit scheme:

[N]o persons, except peace officers, and persons actually traveling, and immediately passing through Los Angeles city, shall wear or carry any dirk, pistol, sword in a cane, slung-shot, or other dangerous or deadly weapon, concealed or otherwise, within the corporate limits of said city, under a penalty of not more than one hundred dollars fine, and imprisonment at the discretion of the

and the giving, transferring and disposition thereof to other persons within this state; providing for the registering of the sales of firearms; prohibiting the carrying or possession of concealed weapons in municipal corporations; providing for the destruction of certain dangerous weapons as nuisances and making it a felony to use or attempt to use certain dangerous weapons against another, §§ 3–4; 1927 (January Session) R.I. Pub. Laws 256, An Act to Regulate the Possession of Firearms: §§ 1, 4, 5 & 6.

⁹⁰ See, e.g., An Act to amend the penal law, in relation to the sale and carrying of dangerous weapons, 1911 N.Y. Laws Ch. 195. For a general discussion of the expansion of regulation after the passage of the Sullivan Act, see Spitzer, *supra* note 84.

⁹¹ Karen Jones & John Wills, *The American West: Competing Visions* 69 (2009). See generally Richard Slotkin, *Gunfighter Nation: The Myth of the Frontier in Twentieth Century America* (1992).

⁹² See Adam Winkler, *Gunfight: The Battle Over the Right to Bear Arms in America* (2011).

⁹³ See Exhibit 1.

Mayor, not to exceed ten days. It is hereby made the duty of each police officer of this city, when any stranger shall come within said corporate limits wearing or carrying weapons, to, as soon as possible, give them information and warning of this ordinance; and in case they refuse or decline to obey.⁹⁴

Sacramento enacted a permit ordinance for public carry in 1876.⁹⁵ Ordinance No. 84 prohibited concealed carry without a permit. The punishment for violating the law was a steep fine. The law also made clear that the primary justification for arming was job-related travel at night:

Section 1: It shall be unlawful for any person, not being a public officer or traveler, or not having a permit from the Police Commissioners of the City of Sacramento, to wear or carry, concealed, any pistol, dirk, or other dangerous or deadly weapon.

Section 2: Any person violating the provisions of this ordinance shall be punished by a fine not exceeding five hundred dollars, or by imprisonment in the city prison not exceeding ten days, or by both such fine and imprisonment.

Section 3: The Police Commissioners of the City of Sacramento may grant written permission to any peaceable person, whose profession or occupation may require him to be out at late hours of the night, to carry concealed deadly weapons for his protection.

The list of municipalities that followed the lead of Sacramento grew in the ensuing decades, included tiny towns such as Lompoc, and the state's largest city San Francisco. Table 1 lists some of the municipalities that adopted permit schemes between 1876-1892.⁹⁶

⁹⁴ Ordinances of the City of Los Angeles, § 36, *reprinted in* William. M. Caswell, *Revised Charter and Compiled Ordinances and Resolutions of the City of Los Angeles* 85 (1878).

⁹⁵ Sacramento, CA Ordinance No. 84: Prohibiting the Carrying of Concealed Deadly Weapons, Apr. 24, 1876, *reprinted in Charter and Ordinances of the City of Sacramento* 173 (R.M. Clarken ed., 1896).

⁹⁶ Research on this topic is still ongoing and this list is not exhaustive, but a summary of what is known based on existing scholarship.

Table 1: Municipal Permit Schemes in California, 1876-1892⁹⁷

Location	Year
Sacramento	1876
Napa	1880
San Francisco	1880
Santa Barbara	1881
Alameda	1882
St. Helena	1884
Fresno	1885
Lompoc	1888
Marysville	1889
Oakland	1890
Monterey	1892

The dawn of the new century did little to diminish California’s interest in enacting strong gun regulations.⁹⁸ A 1917 state law extended the limits on concealed carry in urban areas to include “the carrying, possession, sale or other disposition of firearms capable of being concealed upon the person.” It also provided “for the destruction of certain dangerous weapons as nuisances.”⁹⁹ The state enacted a comprehensive ban on machine guns in 1927.¹⁰⁰

⁹⁷ For the full text of these local permit ordinances, see Exhibit 1. Information on population statistics may be found in Campbell Gibson, *Population of the 100 Largest Cities and Other Urban Places in the United States: 1790 to 1990* (U.S. Census Bureau, Working Paper No. 27, June 1998) <https://www.census.gov/library/working-papers/1998/demo/POP-twps0027.html>, and *Twelfth Census of the United States: Census Bulletin No. 10*, (October 24, 1900), <https://www2.census.gov/library/publications/decennial/1900/bulletins/demographic/10-population-ca.pdf>. If one calculates the number of municipalities that enacted such laws and compares that figure to the population of the state, more than half the state was living under a regulatory scheme that required permits to travel, or banned travel except for limited exceptions.

⁹⁸ Spitzer, *supra* note 84, at 55.

⁹⁹ 1917 Cal. Sess. Laws 221-225, §§ 3-4 (“An act relating to and regulating the carrying, possession, sale or other disposition of firearms capable of being concealed upon the person; prohibiting the possession, carrying, manufacturing and sale of certain other dangerous weapons and the giving, transferring and disposition thereof to other persons within this state; providing for the registering of the sales of firearms; prohibiting the carrying or possession of concealed weapons in municipal corporations; providing for the destruction of certain dangerous weapons as nuisances and making it a felony to use or attempt to use certain dangerous weapons against another.”)

¹⁰⁰ An Act to Prohibit the Possession of Machine Rifles, Machine Guns and Submachine Guns Cal. Stat. 938, ch. 552, §§ 1-2 (1927); Spitzer, *supra* note 84.

Gun regulations in California in subsequent decades of the twentieth century remained robust. Local and state governments responded to the problems posed by gun violence by enacting new laws when necessary. Perhaps the most well-known and controversial example of such a regulation was the adoption of the Mulford Act shortly after the Black Panther Party staged a high-profile protest that included a prominent open carry display. In response to this action, California adopted a new more restrictive law prohibiting open carry.¹⁰¹ Some gun-rights advocates have cited this incident to argue that all gun regulation is inherently racist, a dubious historical claim that conflates different periods of gun regulation from different regions of the nation with the history of the Jim Crow South and the experience of the Black Panthers during the tumultuous social unrest of the 1960s.¹⁰² The decision of civil rights activists to arm themselves in the Jim Crow South and the actions of the Panthers reflected local circumstances. These examples do not demonstrate the existence of a broad national consensus on the right of peaceful public carry, nor do they show that all efforts at gun regulation are inherently racist. What these examples show is that in situations where racially motivated interpersonal violence is common, state-sanctioned terrorism is accepted, and general lawlessness is tolerated, individuals and communities have responded by arming themselves. Generalizing from the facts on the ground in these situations is therefore both problematic and perilous. The Jim Crow South hardly serves as a paradigmatic example of how government and law should be structured in America. Gun laws in this region were notoriously lax, and enforcement of the few gun laws that did exist was overtly discriminatory. Local police forces were closely connected to white supremacist organizations such as the Ku Klux Klan and made little effort to enforce laws in neutral manner. Given these historical facts, claims that open-carry practices during this period in this region shed light on public carry in California today are misplaced and misleading.

¹⁰¹ See *Winkler*, *supra* note 92; Katherine J. King, *Heller As Popular Constitutionalism? The Overlooked Narrative of Armed Black Self-Defense*, 20 U. Pa. J. Const. L. 1237 (2018).

¹⁰² Patrick J. Charles, *Racist History and the Second Amendment: A Critical Commentary*, 43 *Cardozo L. Rev.*, (forthcoming 2022).

The next major turning point in the debate over firearms regulation in California was the ban on “assault weapons” enacted after the Stockton School Massacre.¹⁰³ This moment in the struggle between gun rights and gun regulation typified a more general historical phenomenon: a cycle of tragedy, outrage, regulation, and backlash. The politics of modern gun regulation in recent years have followed this predictable cycle: sensational shootings (typically mass shootings) prompt new legislation, an increase in firearms sales, and a rise of gun-rights activism. If history is any guide to future practices and controversies, it appears likely that the same pattern of violence, legislation, and litigation will continue into the foreseeable future. This pattern continues to define much of the modern gun debate in America, including the debate within California.

One final point about history and firearms regulation is worth noting. Gun regulation and gun rights have been closely connected for most of American history: laws are enacted when a particular firearms technology achieves sufficient market penetration to create a new social problem requiring legislative intervention. The enactment of new laws often produces litigation, and courts either defer to the legislature, or in rare cases, strike down these laws as impermissible violations of the right to bear arms. There is usually a lag between the time when a technological innovation incorporated into a new type of firearm generates enough enthusiasm among gun owners to cause a rise in sales. Thus, until a particular gun achieves a certain level of popularity, it is unlikely to become associated with criminal or anti-social behavior. Legislatures and courts must then play catch-up to address the impact of such weapons and enact laws to address negative consequences.¹⁰⁴

Conclusion

Limits on armed travel in public, including open carry, are of ancient vintage, stretching back deep into Anglo-American law. In England prior to colonization, the public carry of

¹⁰³ Allen Rostron, *Style, Substance, and the Right to Keep and Bear Assault Weapons*, 40 Campbell L. Rev. 301 (2018); Jaclyn Schildkraut and Collin M. Carr, *Mass Shootings, Legislative Responses, and Public Policy: An Endless Cycle of Inaction*, 68 Emory L.J. 1043 (2020); Antonis Katsiyannis, Denise K. Whitford, Robin Parks Ennis, *Historical Examination of United States Intentional Mass School Shootings in the 20th and 21st Centuries: Implications for Students, Schools, and Society*, 27 J. Child & Fam. Stud 2562 (2018).

¹⁰⁴ As Robert Spitzer notes, “So, for example, fully automatic weapons, most famously the Tommy gun, became available for civilian purchase after World War I. But it was only when ownership spread in the civilian population in the mid-to-late 1920s, and the gun became a preferred weapon for gangsters, that states moved to restrict them. The lesson of gun regulation history here is that new technologies bred new laws when circumstances warranted.” See Spitzer, *supra* note 84 at 55, 68.

firearms was generally prohibited in populous areas, with limited exceptions for community defense and law enforcement, and with a legally sanctioned exception for the gentry elite. There is no historical evidence of an individual right for ordinary Britons to openly carry weapons outside of a narrow range of exceptions. In the United States, limitations on the open carry of weapons in populous areas were common in the Founding era and throughout the nineteenth century. While some states recognized an individual right to openly carry firearms for specific purposes, this view was largely restricted to the white citizens of slave-holding Southern states. In other parts of pre-Civil War America, there was a more limited right to carry for reasons of self-defense when a specified threat existed. During the era of the Fourteenth Amendment, the level of firearms regulation intensified. States and localities enacted a variety of limits on public carry, including bans on open carry, concealed carry, and permit schemes. Changes in law enforcement and the administration of justice, particularly in urban areas, produced greater convergence in the approach to firearms regulation than had been possible in antebellum America. By the end of the century, good cause permitting had emerged as the dominant model for regulating arms in public. In short, history supports robust regulation of public carry of firearms, including discretionary permit schemes tied to good cause requirements.

Signed: November 16, 2021

Saul Cornell

Dr. Saul Cornell

Exhibit 1: California Municipal Permit Schemes

Ordinance No. 84: Prohibiting the Carrying of Concealed Deadly Weapons, Apr. 24, 1876, reprinted in CHARTER AND ORDINANCES OF THE CITY OF SACRAMENTO 173 (R.M. Clarken ed., 1896) (Sacramento, California).

Section 1: It shall be unlawful for any person, not being a public officer or traveler, or not having a permit from the Police Commissioners of the City of Sacramento, to wear or carry, concealed, any pistol, dirk, or other dangerous or deadly weapon.

Section 2: Any person violating the provisions of this ordinance shall be punished by a fine not exceeding five hundred dollars, or by imprisonment in the city prison not exceeding ten days, or by both such fine and imprisonment.

Section 3: The Police Commissioners of the City of Sacramento may grant written permission to any peaceable person, whose profession or occupation may require him to be out at late hours of the night, to carry concealed deadly weapons for his protection.

Ordinance No. 55: Prohibiting the Carrying of Concealed Weapons, Nov. 6, 1878, reprinted in CHARTER AND REVISED ORDINANCES OF THE CITY OF EUREKA 251 (1905) (Eureka, California).

Section 1: It shall be unlawful for any person not being a public officer, or traveler, or not having a permit from the Mayor of this city, to wear or carry concealed, within the corporate limits of this city, any pistol, dirk, or any other dangerous or deadly weapon.

Section 2: Every person violating any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor, and upon due proof thereof, shall be fined in a sum not to exceed one hundred dollars, or imprisonment in the city prison not exceeding ten (10) days, or by both such fine and imprisonment. Such persons, and no others, shall be termed travelers within the meaning of this Ordinance as may be actually engaged in making a journey at the time.

Section 3: The Mayor of the city may grant written permission to any peaceable person, whose profession or occupation may require him to be out at late hours of the night, to carry concealed weapons for his own protection.

Prohibiting the Carrying of Concealed Deadly Weapons, Sep. 17, 1880, reprinted in GENERAL ORDERS OF THE BOARD OF SUPERVISORS PROVIDING REGULATIONS FOR THE GOVERNMENT OF THE CITY AND COUNTY OF SAN FRANCISCO 8 (1884) (San Francisco, California).

Section 22: It shall be unlawful for any person, not being a public officer or traveler, or not having a permit from the Police Commissioners of this city and county, to wear or carry concealed, in this city and county, any pistol, dirk or other dangerous or deadly weapon.

Every person violating any of the provisions of this Order shall be deemed guilty of a misdemeanor, and punished accordingly. Such persons and no others shall be termed “travelers,” within the meaning of this Order as may be actually engaged in making a journey at the time.

The Police Commissioners may grant written permission to any peaceable person, whose profession or occupation may require him to be out at late hours of the night, to carry concealed deadly weapons for his own protection.

Concealed Weapons, undated 1880, reprinted in THE NAPA DAILY REGISTER, Nov. 10, 1880, at 2 (Napa, California).

Section 1: Every person not being a peace officer, who shall within the corporate limits of the City of Napa, carry or wear any dirk, pistol, sword-in-cane, sling-shot, or other dangerous or deadly weapon concealed, except by special permission in writing from the President of the Board of Trustees of said city, shall upon conviction thereof before any Court of competent jurisdiction, be deemed guilty of a misdemeanor, and shall be fined in any sum not less than Ten nor more than One Hundred Dollars, and be imprisoned until such fine be paid, not exceeding one day for each dollar of such fine.

Ordinance No. 85: To Prevent the Carrying of Concealed Deadly Weapons, Jan. 6, 1881, reprinted in THE DAILY INDEPENDENT, Mar. 10, 1888, at 3 (Santa Barbara, California).

Section 1: It shall be unlawful for any person not being a public officer or a traveler, or not having a permit from the Mayor, to wear or carry concealed, in said City, any pistol, revolver, knife, dirk or other deadly weapon

Section 2: The Mayor may grant written permission to any peaceable person whose profession or occupation may require him to be out at late hours of the night, to carry concealed deadly weapons for his own protection; and such persons and not others shall be deemed travelers within the meaning of this Ordinance, except such as may be actually engaged in making a journey at the time.

Town Ordinances: Concerning Concealed Weapons, undated 1882, reprinted in ALAMEDA DAILY EVENING ENCINAL, May 3, 1882, at 3 (Alameda, California).

Section 1: It shall be unlawful for anyone, not being a public officer, or not having a permit from the President of the Board of Trustees, countersigned by the Chief of Police, to wear or carry concealed weapons about his person in the Town of Alameda, or any pistol, slungshot, brass or iron knuckles, or iron bars such as are usually carried by Chinamen, sand clubs, dirk or bowie knife, or dangerous or deadly weapon.

Section 2: The President of the Board of Trustees may grant written permission to any peaceable person, whose profession or occupation may require him to be out at late hours of the night, to carry concealed deadly weapons for his own protection. Such permit shall be countersigned by the Chief of Police before it shall be issued, and the Chief of Police shall number the same and keep a registered list of the persons to whom issued, with their residences and occupations.

Section 3: Any person violating this ordinance shall be punished by a fine not exceeding one hundred dollars, or by imprisonment in the jail of Alameda county not exceeding fifty days, or by both such fine and imprisonment.

Ordinance No. 62: An Ordinance to Prohibit the Carrying of Concealed Deadly Weapons, Dec. 9 1884, re-printed in ST. HELENA STAR, Dec. 11, 1884, at 2 (St. Helena, California).

Section 1: Every person, not being a peace officer, who shall within the corporate limits of the town of St. Helena, carry or wear concealed any pistol, dirk, sword, slung-shot or other dangerous or deadly weapon, shall be deemed guilty of a misdemeanor and shall be fined in any sum not less than ten nor more than fifty dollars or by imprisonment not less than one day nor more than thirty days.

Section 2: Provided the President of the Board of Trustees may grant written permission to any peaceable person whose profession or occupation may require him to be out at late hours of the night, to carry concealed deadly weapons for his own protection, such permission not to extend beyond one year.

Ordinance No. 6, Nov. 5, 1885, reprinted in THE FRESNO WEEKLY REPUBLICAN, Nov. 7, 1885, at 3 (Fresno, California).

Section 25: No person except peace officers and travelers shall carry concealed upon his person any pistol or firearm, slungshot, dirk or Bowie knife, or other deadly weapon, without a written permission from the President of the Board of Trustees; provided, said President shall have power to revoke such permission at any time.

Ordinance No. 10: An Ordinance Prohibiting the Carrying of Concealed Deadly Weapons, and Fixing the Penalty Therefor, Aug. 21, 1888, reprinted in LOMPOC RECORD, Aug. 25, 1888, at 2 (Lompoc, California).

Section 1: It shall be unlawful for any person not being a public officer or traveler, not having a written permit from the President of the Board of Trustees of the Town of Lompoc, to wear or carry concealed, within the corporate limits of the Town of Lompoc, any pistol, revolver, dirk, stiletto or other dangerous or deadly weapon.

Section 2: Every person violating any of the provisions of this Ordinance shall be deemed guilty of a misdemeanor and be punished by a fine not exceeding one hundred dollars, or by imprisonment in the town jail, if there be one, and if not, then by imprisonment in the county jail of Santa Barbara county, for not exceeding thirty days, or by both such fine and imprisonment.

Section 3: Such persons, and no others, shall be termed “travelers” within the meaning of this Ordinance, as may be actually engaged in making a journey at the time.

Section 4: The President of the Board of Trustees of the Town of Lompoc may grant written permission to any peaceable person whose profession or occupation may require him to be out at late hours of the night within the corporate limits of the said Town of Lompoc, to carry concealed deadly weapons for his own protection.

An Ordinance: An Ordinance to Prohibit the Carrying of Concealed Deadly Weapons, Feb. 4, 1889, re- printed in MARYSVILLE DAILY DEMOCRAT, Feb. 7, 1889, at 4 (Marysville, California).

Section 1: It shall be unlawful for any person, not being a public officer or traveler, or not having a writ- ten permit from the Marshal of the city of Marysville, to wear or carry concealed, or otherwise, within the limits of the city of Marysville, any pistol, dirk, or other dangerous or deadly weapon.

Section 2: Such person and no others shall be termed “travelers” within the meaning of this ordinance as may be actually engaged in making a journey at the time. Any person violating the provisions of the ordinance upon conviction thereof shall be punished by a fine not to exceed five hundred dollars or by imprisonment not to exceed ten days, or by both.

Section 3: The Marshal may grant written permission to any person whose profession or occupation may require him to be out at late hours of the night, to carry concealed deadly weapons for his own protection. The Marshal may at any time revoke any permit, and after notice to the person holding a permit and a demand for the return thereof, such permit shall immediately become void.

Section 4: The Marshal shall keep, or cause to be kept, a book in which shall be recorded, the name of the person to whom a permit is granted. The date of such permit and the time the permit continues; the date when the permit is discontinued, and the date when the permit is revoked.

Ordinance No. 1141: An Ordinance to Prohibit the Carrying of Concealed Weapons, May 15, 1890, re- printed in CHARTER OF THE CITY OF OAKLAND 332-33 (W.A. Dow ed., 1898) (Oakland, California).

Section 1: It shall be unlawful for any person in the City of Oakland, not being a public officer or a traveler actually engaged in making a journey, to wear or carry concealed about his person without a permit, as hereinafter provided, any pistol, slung-shot, brass or iron knuckles, sand club, dirk or bowie knife, or iron bar or other dangerous or deadly weapon, or any sling or other contrivance by which shot or other missiles are or may be hurled or projected. A written permit may be granted by the Mayor for a period of not to exceed one year to any peaceable person whose profession or occupation may require him to be out at late hours of the night to carry a concealed deadly weapon upon his person.

Section 2: Every person violating any provision of this ordinance is guilty of a misdemeanor, and upon conviction thereof shall be punished by fine of not to exceed one hundred dollars; and in case such fine be not paid, then by imprisonment at the rate of one day for every two dollars of the fine so imposed.

Ordinance No. 49: To Prohibit the Carrying of Concealed Weapons, Jan. 5, 1892, reprinted in THE ORDINANCES AND CHARTER OF THE CITY OF MONTEREY 112 (1913) (Monterey, California).

Section 1: Every person not being a peace officer, who shall, within the corporate limits of the City of Monterey, carry or wear any dirk, pistol, sword in cane, slung-shot or other dangerous or deadly weapon concealed, except by special permission in writing from the President of the Board of Trustees of said City, shall, upon conviction thereof before any Court of competent jurisdiction be deemed guilty of a misdemeanor and shall be fined in any sum not Less than Twenty- five nor more than Three Hundred Dollars, or by imprisonment not exceeding ninety days, or by both such fine and imprisonment

Section 2: Ordinance No. 9 of the City of Monterey, passed by the Board of Trustees on the 16th day of July, 1889, and all ordinances and parts of ordinances in conflict herewith, are hereby repealed.

EXHIBIT 2



Right-to-Carry Laws and Violent Crime: A Comprehensive Assessment Using Panel Data and a State-Level Synthetic Control Analysis

*John J. Donohue, Abhay Aneja, and Kyle D. Weber**

This article uses more complete state panel data (through 2014) and new statistical techniques to estimate the impact on violent crime when states adopt right-to-carry (RTC) concealed handgun laws. Our preferred panel data regression specification, unlike the statistical model of Lott and Mustard that had previously been offered as evidence of crime-reducing RTC laws, both satisfies the parallel trends assumption and generates statistically significant estimates showing RTC laws *increase* overall violent crime. Our synthetic control approach also finds that RTC laws are associated with 13–15 percent *higher* aggregate violent crime rates 10 years after adoption. Using a consensus estimate of the elasticity of crime with respect to incarceration of 0.15, the average RTC state would need to roughly double its prison population to offset the increase in violent crime caused by RTC adoption.

I. INTRODUCTION

For two decades, there has been a spirited academic debate over whether “shall-issue” concealed carry laws (also known as right-to-carry or RTC laws) have an important impact on crime. The “More Guns, Less Crime” hypothesis originally articulated by John Lott and David Mustard (1997) claimed that RTC laws decreased violent

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crime (possibly shifting criminals in the direction of committing more property crime to avoid armed citizens). This research may well have encouraged state legislatures to adopt RTC laws, arguably making the pair's 1997 paper in the *Journal of Legal Studies* one of the most consequential criminological articles published in the last 25 years.

The original Lott and Mustard paper as well as subsequent work by John Lott in his 1998 book *More Guns, Less Crime* used a panel data analysis to support the theory that RTC laws reduce violent crime. A large number of papers examined the Lott thesis, with decidedly mixed results. An array of studies, primarily those using the limited data initially employed by Lott and Mustard for the period 1977–1992 and those failing to adjust their standard errors by clustering, supported the Lott and Mustard thesis, while a host of other papers were skeptical of the Lott findings.¹

It was hoped that the 2005 National Research Council report *Firearms and Violence: A Critical Review* (hereafter the NRC Report) would resolve the controversy over the impact of RTC laws, but this was not to be. While one member of the committee—James Q. Wilson—did partially endorse the Lott thesis by saying there was evidence that murders fell when RTC laws were adopted, the other 15 members of the panel pointedly criticized Wilson's claim, saying that “the scientific evidence does not support his position.” The majority emphasized that the estimated effects of RTC laws were highly sensitive to the particular choice of explanatory variables and thus concluded that the panel data evidence through 2000 was too fragile to support any conclusion about the true effects of these laws.

This article answers the call of the NRC Report for more and better data and new statistical techniques to be brought to bear on the issue of the impact of RTC laws on crime. First, we revisit the state panel data evidence to see if extending the data for an additional 14 years, thereby providing additional crime data for prior RTC states as well as on 11 newly adopting RTC states, offers any clearer picture of the causal impact of allowing citizens to carry concealed weapons. We distill from an array of different panel data regressions for various crime categories for two time periods using two major sets of explanatory variables—including our preferred specification (DAW) and that of Lott and Mustard (LM)—a subset of regressions that satisfy the critical parallel trends assumption. All the statistically significant results from these regressions show RTC laws are associated with *higher* rates of overall violent crime, property crime, or murder.

Second, to address some of the weaknesses of panel data models, we undertake an extensive synthetic control analysis in order to present the most complete and robust

¹In support of Lott and Mustard (1997), see Lott's 1998 book *More Guns, Less Crime* (and the 2000 and 2010 editions). Ayres and Donohue (2003) and the 2005 National Research Council report *Firearms and Violence: A Critical Review* dismissed the Lott/Mustard hypothesis as lacking credible statistical support, as did Aneja et al. (2011) (and Aneja et al. (2014) further expanding the latter). Moody and Marvell (2008) and Moody et al. (2014) continued to argue in favor of a crime-reducing effect of RTC laws, although Zimmerman (2014) and McElroy and Wang (2017) find that RTC laws *increase* violent crime and Siegel et al. (2017) find RTC laws increase murders, as discussed in Section III.B.

results to guide policy in this area.² This synthetic control methodology—first introduced in Abadie and Gardeazabal (2003) and expanded in Abadie et al. (2010, 2014)—uses a matching methodology to create a credible “synthetic control” based on a weighted average of other states that best matches the prepassage pattern of crime for each “treated” state, which can then be used to estimate the likely path of crime if RTC-adopting states had not adopted an RTC law. By comparing the actual crime pattern for RTC-adopting states with the estimated synthetic controls in the postpassage period, we derive year-by-year estimates for the impact of RTC laws in the 10 years following adoption.³

To preview our major findings, the synthetic control estimate of the average impact of RTC laws across the 33 states that adopt between 1981 and 2007⁴ indicates that violent crime is substantially higher after 10 years than would have been the case had the RTC law not been adopted. Essentially, for violent crime, the synthetic control approach provides a similar portrayal of RTC laws as that provided by the DAW panel data model and undermines the results of the LM panel data model. According to the aggregate synthetic control models—regardless of whether one uses the DAW or LM covariates—RTC laws led to increases in violent crime of 13–15 percent after 10 years, with positive but not statistically significant effects on property crime and murder. The median effect of RTC adoption after 10 years is 12.3 percent if one considers all 31 states with 10 years worth of data and 11.1 percent if one limits the analysis to the 26 states with the most compelling prepassage fit between the adopting states and their synthetic controls. Comparing our DAW specification findings with the results generated using placebo treatments, we are able to reject the null hypothesis that RTC laws have no impact on aggregate violent crime.

The structure of the article proceeds as follows. Section II begins with a discussion of the ways in which increased carrying of guns could either dampen crime (by thwarting or deterring criminals) or increase crime by directly facilitating violence or aggression by permit holders (or others), greatly expanding the loss and theft of guns, and burdening the functioning of the police in ways that diminish their effectiveness in controlling crime. We then show that a simple comparison of the drop in violent crime from

²Abadie et al. (2014) identify a number of possible problems with panel regression techniques, including the danger of extrapolation when the observable characteristics of the treated area are outside the range of the corresponding characteristics for the other observations in the sample.

³The accuracy of this matching can be qualitatively assessed by examining the root mean square prediction error (RMSPE) of the synthetic control in the pretreatment period (or a variation on this RMSPE implemented in this article), and the statistical significance of the estimated treatment effect can be approximated by running a series of placebo estimates and examining the size of the estimated treatment effect in comparison to the distribution of placebo treatment effects.

⁴Note that we do not supply a synthetic control estimate for Indiana, even though it passed its RTC law in 1980, owing to the fact that we do not have enough pretreatment years to accurately match the state with an appropriate synthetic control. Including Indiana as a treatment state, though, would not meaningfully change our results. Similarly, we do not generate synthetic control estimates for Iowa and Wisconsin (whose RTC laws went into effect in 2011) or for Illinois (2014 RTC law), because of the limited postpassage data.

1977–2014 in the states that have resisted the adoption of RTC laws is almost an order of magnitude greater than in RTC-adopting states (a 42.3 percent drop vs. a 4.3 percent drop), although a spartan panel data model with only state and year effects reduces the differential to 20.2 percent. Section III discusses the panel data results, showing that the DAW model indicates that RTC laws have increased violent and property crime, with weaker evidence that RTC laws increased homicide (but not non-gun homicide) over our entire data period, while both the DAW and the LM model provide statistically significant evidence that RTC laws have increased murder in the postcrack period.

The remainder of the article shows that, using either the DAW or LM explanatory variables, the synthetic control approach uniformly supports the conclusion that RTC laws lead to substantial increases in violent crime. Section IV describes the details of our implementation of the synthetic control approach and shows that the mean and median estimates of the impact of RTC laws show greater than double-digit increases by the 10th year after adoption. Section V provides aggregate synthetic control estimates of the impact of RTC laws, and Section VI concludes.

II. THE IMPACT OF RTC LAWS: THEORETICAL CONSIDERATIONS AND SIMPLE COMPARISONS

A. *Gun Carrying and Crime*

1. Mechanisms of Crime Reduction

Allowing citizens to carry concealed handguns can influence violent crime in a number of ways, some benign and some invidious. Violent crime can fall if criminals are deterred by the prospect of meeting armed resistance, and potential victims or armed bystanders may thwart or terminate attacks by either brandishing weapons or actually firing on the potential assailants. For example, in 2012, a Pennsylvania concealed carry permit holder became angry when he was asked to leave a bar because he was carrying a weapon and, in the ensuing argument, he shot two men, killing one, before another permit holder shot him (Kalinowski 2012). Two years later, a psychiatric patient in Pennsylvania killed his caseworker, and grazed his psychiatrist before the doctor shot back with his own gun, ending the assault by wounding the assailant (Associated Press 2014).

The impact of the Pennsylvania RTC law is somewhat ambiguous in both these cases. In the bar shooting, it was a permit holder who started the killing and another who ended it, so the RTC law may actually have increased crime. The case of the doctor's use of force is more clearly benign, although the RTC law may have made no difference: a doctor who routinely deals with violent and deranged patients would typically be able to secure a permit to carry a gun even under a may-issue regime. Only a statistical analysis can reveal whether in aggregate extending gun carrying beyond those with a demonstrated need and good character, as shall-issue laws do, imposes or reduces overall costs.

Some defensive gun uses can be socially costly and contentious even if they do avoid a robbery or an assault. For example, in 1984, when four teens accosted Bernie Goetz on a New York City subway, he prevented an anticipated robbery by shooting all four,

permanently paralyzing one.⁵ In 2010, a Pennsylvania concealed carry holder argued that he used a gun to thwart a beating. After a night out drinking, Gerald Ung, a 28-year-old Temple University law student, shot a 23-year-old former star lacrosse player from Villanova, Eddie DiDonato, when DiDonato rushed Ung angrily and aggressively after an altercation that began when DiDonato was bumped while doing chin ups on scaffolding on the street in Philadelphia. When prosecuted, Ung testified that he always carried his loaded gun when he went out drinking. A video of the incident shows that Ung was belligerent and had to be restrained by his friends before the dispute became more physical, which raises the question of whether his gun carrying contributed to his belligerence, and hence was a factor that precipitated the confrontation. Ung, who shot DiDonato six times, leaving DiDonato partially paralyzed with a bullet lodged in his spine, was acquitted of attempted murder, aggravated assault, and possessing an instrument of crime (Slobodzian 2011). While Ung avoided criminal liability and a possible beating, he was still prosecuted and then hit with a major civil action, and the incident did impose significant social costs, as shootings frequently do.⁶

In any event, the use of a gun by a concealed carry permit holder to thwart a crime is a statistically rare phenomenon. Even with the enormous stock of guns in the United States, the vast majority of the time that someone is threatened with violent crime no gun will be wielded defensively. A five-year study of such violent victimizations in the United States found that victims reported failing to defend or to threaten the criminal with a gun 99.2 percent of the time—this in a country with 300 million guns in civilian hands (Planty & Truman 2013). Adding 16 million permit holders who often dwell in low-crime areas may not yield many opportunities for effective defensive use for the roughly 1 percent of Americans who experience a violent crime in a given year, especially since criminals can attack in ways that preempt defensive measures.⁷

2. Mechanisms of Increasing Crime

Since the statistical evidence presented in this article suggests that the benign effects of RTC laws are outweighed by the harmful effects, we consider five ways in which RTC laws could increase crime: (a) elevated crime by RTC permit holders or by others, which can be induced by the greater belligerence of permit holders that can attend gun carrying or even through counterproductive attempts by permit holders to intervene protectively; (b) increased crime by those who acquire the guns of permit holders via loss or theft; (c) a change in culture induced by the hyper-vigilance about one's rights and the need

⁵The injury to Darrell Cabey was so damaging that he remains confined to a wheelchair and functions with the intellect of an eight-year-old, for which he received a judgment of \$43 million against Goetz, albeit without satisfaction (Biography.com 2016).

⁶According to the civil lawsuit brought by DiDonato, his injuries included “severe neurological impairment, inability to control his bowels, depression and severe neurological injuries” (Lat 2012).

⁷Even big city police officers rarely need to fire a weapon despite their far greater exposure to criminals. According to a 2016 Pew Research Center survey of 7,917 sworn officers working in departments with 100 or more officers, “only about a quarter (27%) of all officers say they have ever fired their service weapon while on the job” (Morin & Mercer 2017).

to avenge wrongs that the gun culture can nurture; (d) elevated harm as criminals respond to the possibility of armed resistance by increasing their gun carrying and escalating their level of violence; and (e) all of the above factors will either take up police time or increase the risks the police face, thereby impairing the crime-fighting ability of police in ways that can increase crime.

a. Crime committed or induced by permit holders: RTC laws can lead to an increase in violent crime by increasing the likelihood a generally law-abiding citizen will commit a crime or increasing the criminal behavior of others. Moreover, RTC laws may facilitate the criminal conduct of those who generally have a criminal intent. We consider these two avenues below.

i. The pathway from the law-abiding citizen

Evidence from a nationally representative sample of 4,947 individuals indicates that Americans tend to overestimate their gun-related abilities. For example, 82.6 percent believed they were less likely than the average person to use a gun in anger. When asked about their “ability to responsibly own a handgun,” 50 percent of the respondents deemed themselves to be in the top 10 percent and 23 percent placed their ability within the top 1 percent of the U.S. population. Such overconfidence has been found to increase risk taking and could well lead to an array of socially harmful consequences ranging from criminal misconduct and gun accidents to lost or stolen guns (Stark & Sachau 2016).

In a number of well-publicized cases, concealed carry permit holders have increased the homicide toll by killing someone with whom they became angry over an insignificant issue, ranging from merging on a highway and talking on a phone in a theater to playing loud music at a gas station (Lozano 2017; Levenson 2017; Scherer 2016). In one particularly tragic example in January 2019 at a bar in State College, Pennsylvania, a lawful permit holder, Jordan Witmer, got into a fight with his girlfriend. When a father and son sitting at the bar tried to intervene, Witmer killed both of them, shot his girlfriend in the chest, and fled. When his car crashed, Witmer broke into a nearby house, killed the 82-year-old homeowner, who was with his wife on their 60th wedding anniversary, and then killed himself (Sauro 2019). Another such example occurred in July 2018 when Michael Drejka started to hassle a woman sitting in a car in a disabled parking spot while her husband and five-year-old son ran into a store. When the husband emerged, he pushed Drejka to the ground, who then killed him with a shot to the chest. The killing is caught on video and Drejka is being prosecuted for manslaughter in Clearwater, Florida (Simon 2018).

When Philadelphia permit holder Louis Mockewich shot and killed a popular youth football coach (another permit holder carrying his gun) over a dispute concerning snow shoveling in January 2000, Mockewich’s car had an NRA bumper sticker reading “Armed with Pride” (Gibbons & Moran 2000). An angry young man, with somewhat of a paranoid streak, who has not yet been convicted of a crime or adjudicated as a “mental defective,” may be encouraged to carry a gun if he resides in an RTC state.⁸ That such

⁸The Gun Control Act of 1968 prohibits gun possession by felons and adjudicated “mental defectives” (18 U.S.C. 922(d)(4), 2016).

individuals will be more likely to be aggressive once armed and hence more likely to stimulate violence by others should not be surprising.

Recent evidence suggests that as gun carrying is increasing with the proliferation of RTC laws, road rage incidents involving guns are rising (Biette-Timmons 2017; Plumlee 2012). Incidents in which “someone in a car brandished a gun in a threatening manner or fired a gun at another driver or passenger have more than doubled in the last three years, from 247 in 2014 to 620 in 2016 The highest-profile recent road rage incidents involved two NFL players, Joe McNight and Will Smith, killed ... in separate road rage shootings in New Orleans” (Shen 2017).⁹ In the nightmare case for RTC, two Michigan permit-holding drivers pulled over to battle over a tailgating dispute in September 2013 and each shot and killed the other (Stuart 2013). Without Michigan’s RTC law, this would likely have not been a double homicide. Indeed, two studies—one for Arizona and one for the nation as a whole—found that “the evidence indicates that those with guns in the vehicle are more likely to engage in ‘road rage’” (Hemenway et al. 2006; Miller et al. 2002).¹⁰ These studies may suggest either that gun carrying emboldens more aggressive behavior or reflects a selection effect for more aggressive individuals.¹¹ If this is correct, then it may not be a coincidence that there are so many cases in which a concealed carry holder acts belligerently and is shot by another permit holder.¹²

⁹Joe McNight and Ronald Gasser were arguing through their open car windows as they drove for miles. When they were both stopped at a red light, McNight walked over to Gasser’s car, and the “two argued through the passenger-side window until Gasser pulled a gun from between his seat and the center console and shot McNight three times.” Gasser was convicted of manslaughter and sentenced to a prison term of 30 years (Calder 2018).

¹⁰A perfect illustration was provided by 25-year-old Minnesota concealed carry permit holder Alexander Weiss, who got into an argument after a fender bender caused by a 17-year-old driver. Since the police had been called, it is hard to imagine that this event could end tragically—unless someone had a gun. Unfortunately, Weiss, who had a bumper sticker on his car saying “Gun Control Means Hitting Your Target,” killed the 17-year-old with one shot to the chest and has been charged with second-degree murder (KIMT 2018).

¹¹While concealed carry permit holders should be free of any felony conviction, and thus show a lower overall rate of violence than a group that contains felons, a study in Texas found that when permit holders do commit a crime, it tends to be a severe one: “the concentration of convictions for weapons offenses, threatening someone with a firearm, and intentionally killing a person stem from the ready availability of a handgun for CHL holders” (Phillips et al. 2013). See, for example, a Texas permit holder who told police he shot a man in the head at an IHOP restaurant in Galveston because “he was annoyed by the noise the victim and others were making just a table away” (ABC News 2018).

¹²We have just cited three of them: the 2012 Pennsylvania bar shooting, the 2000 Philadelphia snow-shoveling dispute, and the 2013 Michigan road-rage incident. Here are two more. Former NFL player Will Smith, a concealed carry permit holder with a loaded gun in his car, was engaged in a road rage incident with another permit holder, who killed him with seven shots in the back and one into his side and shot his wife, hitting both knees. The shooter was convicted of manslaughter and sentenced to 25 years in prison (Lane 2018). In yet another recent case, two permit holders glowered at each other in a Chicago gas station, and when one drew his weapon, the second man pulled out his own gun and killed the 43-year-old instigator, who died in front of his son, daughter, and pregnant daughter-in-law (Hernandez 2017). A video of the encounter can be found at <https://www.youtube.com/watch?v=I2j9vVDHIBU>. According to the police report obtained by the *Chicago Tribune*, a bullet from the gun exchange broke the picture window of a nearby garden apartment and another shattered the window of a car with four occupants that was driving past the gas station. No charges were brought against the surviving permit holder, who shot first but in response to the threat initiated by the other permit holder.

In general, the critique that the relatively low number of permit revocations proves that permit holders do not commit enough crime to substantially elevate violent criminality is misguided for a variety of reasons. First, only a small fraction of 1 percent of Americans commits a gun crime each year, so we do not expect even a random group of Americans to commit much crime, let alone a group purged of convicted felons. Nonetheless, permit revocations clearly understate the criminal misconduct of permit holders, since not all violent criminals are caught and we have just seen five cases where six permit holders were killed, so no permit revocation or criminal prosecution would have occurred regardless of any criminality by the deceased.¹³ Second, and perhaps more importantly, RTC laws increase crime by individuals other than permit holders in a variety of ways. The messages of the gun culture, perhaps reinforced by the adoption of RTC laws, can promote fear and anger, which are emotions that can invite more hostile confrontations leading to violence. For example, if permit holder George Zimmerman hassled Trayvon Martin only because Zimmerman was armed, then the presence of Zimmerman's gun could be deemed to have encouraged a hostile confrontation, regardless of who ultimately becomes violent.¹⁴

Even well-intentioned interventions by permit holders intending to stop a crime have elevated the crime count when they ended with the permit holder either being killed by the criminal¹⁵ or shooting an innocent party by

¹³In addition, NRA-advocated state laws that ban the release of information about whether those arrested for even the most atrocious crimes are RTC permit holders make it extremely difficult to monitor their criminal conduct.

¹⁴Psychologists have found that the very act of carrying a gun tends to distort perceptions of reality in a way that exaggerates perceived threats. "We have shown here that ... the act of wielding a firearm raises the likelihood that nonthreatening objects will be perceived as threats. This bias can clearly be horrific for victims of accidental shootings" (Witt & Brockmole 2012). As one permit holder explained: "a gun causes its bearer to see the world differently. A well-lit city sidewalk full of innocent pedestrians becomes a scene—a human grouping one of whose constituents you might need to shoot. Something good in yourself is, by this means, sacrificed. And more. In a sudden, unwieldy hauling-out of your piece, or just by having your piece in your pocket, you can fumble around and shoot yourself, as often happens and isn't at all funny. Or you might shoot some little girl on a porch across the street or two streets away, or five streets away. Lots and lots of untoward things can happen when you're legally carrying a concealed firearm. One or two of them might turn out to be beneficial—to you. But a majority are beneficial to neither man nor beast. Boats are said, by less nautical types, always to be seeking a place to sink. Guns—no matter who has them—are always seeking an opportunity to go off. Anybody who says different is a fool or a liar or both" (Ford 2016).

¹⁵In 2016 in Arlington, Texas, a man in a domestic dispute shot at a woman and then tried to drive off (under Texas law it was lawful for him to be carrying his gun in his car, even though he did not have a concealed carry permit.) When he was confronted by a permit holder, the shooter slapped the permit holder's gun out of his hand and then killed him with a shot to the head. Shortly thereafter, the shooter turned himself into the police (Mettler 2016). Similarly, when armed criminals entered a Las Vegas Walmart in 2014 and told everyone to get out because "[t]his is a revolution," one permit holder told his friend he would stay to confront the threat. He was gunned down shortly before the police arrived, adding to the death toll rather than reducing it (NBC News 2014). Finally, in January 2010, Stephen Sharp arrived at work at a St. Louis power plant just as co-worker Timothy Hendron began firing at fellow workers with an AK-47. Retrieving a pistol from his truck, Sharp opened fire at Hendron, and fecklessly discharged all six rounds from across the parking lot. Unharmed, Hendron returned fire, grievously wounding Sharp and continuing his rampage unabated. When the police arrived, there was "no clear distinction between attacker and victims." In the end, Hendron killed three and wounded five before killing himself (Byers 2010).

mistake.¹⁶ Indeed, an FBI study of 160 active shooter incidents found that in almost half (21 of 45) the situations in which police engaged the shooter to end the threat, law enforcement suffered casualties, totaling nine killed and 28 wounded (Blair & Schweit 2014). One would assume the danger to an untrained permit holder trying to confront an active shooter would be greater than that of a trained professional, which may in part explain why effective intervention in such cases by permit holders to thwart crime is so rare. Although the same FBI report found that in 21 of a total of 160 active shooter incidents between 2000 and 2013, “the situation ended after unarmed citizens safely and successfully restrained the shooter,” there was only one case—in a bar in Winnemucca, Nevada in 2008—in which a private armed citizen other than an armed security guard stopped a shooter, and that individual was an active-duty Marine (Holzel 2008).

ii. The pathway from those harboring criminal intent

Over the 10-year period from May 2007 through January 2017, the Violence Policy Center (2017) lists 31 instances in which concealed carry permit holders killed three or more individuals in a single incident. Many of these episodes are disturbingly similar in that there was substantial evidence of violent tendencies and/or serious mental illness, but no effort was made to even revoke the carry permit, let alone take effective action to prevent access to guns. For example, on January 6, 2017, concealed handgun permit holder Esteban Santiago, 26, killed five and wounded six others at the Fort Lauderdale-Hollywood Airport, before sitting on the floor and waiting to be arrested as soon as he ran out of ammunition. In the year prior to the shooting, police in Anchorage, Alaska, charged Santiago with domestic violence, and visited the home five times for various other complaints (KTUU 2017). In November 2016, Santiago entered the Anchorage FBI office and spoke of “mind control” by the CIA and having “terroristic thoughts” (Hopkins 2017). Although the police took his handgun at the time, it was returned to him on December 7, 2016 after Santiago spent four days in a mental health facility because, according to federal officials, “there was no mechanism in federal law for officers to permanently seize the weapon”¹⁷ (Boots 2017). Less than a month later, Santiago flew with his gun to Florida and opened fire in the baggage claim area.¹⁸

In January 2018, the FBI charged Taylor Wilson, a 26-year-old Missouri concealed carry permit holder, with terrorism on an Amtrak train when, while carrying a loaded

¹⁶In 2012, “a customer with a concealed handgun license ... accidentally shot and killed a store clerk” during an attempted robbery in Houston (MacDonald 2012). Similarly, in 2015, also in Houston, a bystander who drew his weapon upon seeing a carjacking incident ended up shooting the victim in the head by accident (KHOU 2015). An episode in June 2017 underscored that interventions even by well-trained individuals can complicate and exacerbate unfolding crime situations. An off-duty Saint Louis police officer with 11 years of service was inside his home when he heard the police exchanging gunfire with some car thieves. Taking his police-issued weapon, he went outside to help, but as he approached he was told by two officers to get on the ground and then shot in the arm by a third officer who “feared for his safety” (Hauser 2017).

¹⁷Moreover, in 2012, Puerto Rican police confiscated Santiago’s handguns and held them for two years before returning them to him in May 2014, after which he moved to Alaska (Clary et al. 2017).

¹⁸For a similar story of repeated gun violence and signs of mental illness by a concealed carry permit holder, see the case of Aaron Alexis, who murdered 12 at the Washington Navy Yard in September 2013 (Carter et al. 2013).

weapon, he tried to interfere with the brakes and controls of the moving train. According to the FBI, Wilson had (1) previously joined an “alt-right” neo-Nazi group and traveled to the Unite the Right rally in Charlottesville, Virginia in August 2017; (2) indicated his interest in “killing black people” and was the perpetrator of a road-rage incident in which he pointed a gun at a black woman for no apparent reason while driving on an interstate highway in April 2016; and (3) possessed devices and weapons “to engage in criminal offenses against the United States.” Research is needed to analyze whether having a permit to legally carry weapons facilitates such criminal designs (Pilger 2018).

In June 2017, Milwaukee Police Chief Ed Flynn pointed out that criminal gangs have taken advantage of RTC laws by having gang members with clean criminal records obtain concealed carry permits and then hold the guns after they are used by the active criminals (Officer.com 2017). Flynn was referring to so-called human holsters who have RTC permits and hold guns for those barred from possession. For example, Wisconsin permit holder Darrail Smith was stopped three times while carrying guns away from crime scenes before police finally charged him with criminal conspiracy. In the second of these, Smith was “carrying three loaded guns, including one that had been reported stolen,” but that was an insufficient basis to charge him with a crime or revoke his RTC permit (DePrang 2015). Having a “designated permit holder” along to take possession of the guns when confronted by police may be an attractive benefit for criminal elements acting in concert (Fernandez et al. 2015; Luthern 2015).

b. Increased gun thefts: The most frequent occurrence each year involving crime and a good guy with a gun is not self-defense but rather the theft of the good guy’s gun, which occurs hundreds of thousands of times each year.¹⁹ Data from a nationally representative web-based survey conducted in April 2015 of 3,949 subjects revealed that those who carried guns outside the home had their guns stolen at a rate over 1 percent per year (Hemenway et al. 2017). Given the current level of roughly 16 million permit holders, a plausible estimate is that RTC laws result in permit holders furnishing more than 100,000 guns per year to criminals.²⁰ As Phil Cook has noted, the relationship between gun theft and crime is a complicated one for which few definitive data are currently available (Cook

¹⁹According to Larry Keane, senior vice president of the National Shooting Sports Foundation (a trade group that represents firearms manufacturers): “There are more guns stolen every year than there are violent crimes committed with firearms.” More than 237,000 guns were reported stolen in the United States in 2016, according to the FBI’s National Crime Information Center. The actual number of thefts is obviously much higher since many gun thefts are never reported to police, and “many gun owners who report thefts do not know the serial numbers on their firearms, data required to input weapons into the NCIC.” The best survey estimated 380,000 guns were stolen annually in recent years, but given the upward trend in reports to police, that figure likely understates the current level of gun thefts (Freskos 2017b). According to National Crime Information Center data, the number of guns reported stolen nationally jumped 60 percent between 2007 and 2016 (Freskos 2018a).

²⁰While the Hemenway et al. study is not large enough and detailed enough to provide precise estimates, it establishes that those who have carried guns in the last month are more likely to have them stolen. A recent Pew Research Survey found that 26 percent of American gun owners say they carry a gun outside of their home “all or most of the time” (Igielnik & Brown 2017, surveying 3,930 U.S. adults, including 1,269 gun owners). If 1 percent of 16 million permit holders have guns stolen each year, that would suggest 160,000 guns were stolen. Only guns stolen outside the home would be attributable to RTC laws, so a plausible estimate of guns stolen per year owing to gun carrying outside the home might be 100,000.

2018). But if there was any merit to the outrage over the loss of about 1,400 guns during the Fast and Furious program that began in 2009 and the contribution that these guns made to crime (primarily in Mexico), it highlights the severity of the vastly greater burdens of guns lost by and stolen from U.S. gun carriers.²¹ A 2013 report from the Bureau of Alcohol, Tobacco, Firearms, and Explosives concluded that “lost and stolen guns pose a substantial threat to public safety and to law enforcement. Those that steal firearms commit violent crimes with stolen guns, transfer stolen firearms to others who commit crimes, and create an unregulated secondary market for firearms, including a market for those who are prohibited by law from possessing a gun” (Office of the Director—Strategic Management 2013; Parsons & Vargas 2017).

For example, after Sean Penn obtained a permit to carry a gun, his car was stolen with two guns in the trunk. The car was soon recovered, but the guns were gone (Donohue 2003). In July 2015 in San Francisco, the theft of a gun from a car in San Francisco led to a killing of a tourist on a city pier that almost certainly would not have occurred if the lawful gun owner had not left it in the car (Ho 2015). Just a few months later, a gun stolen from an unlocked car was used in two separate killings in San Francisco and Marin in October 2015 (Ho & Williams 2015). According to the National Crime Victimization Survey, in 2013 there were over 660,000 auto thefts from households. More guns being carried in vehicles by permit holders means more criminals will be walking around with the guns stolen from permit holders.²²

As Michael Rallings, the top law enforcement official in Memphis, Tennessee, noted in commenting on the problem of guns being stolen from cars: “Laws have unintended consequences. We cannot ignore that as a legislature passes laws that make guns more accessible to criminals, that has a direct effect on our violent crime rate” (Freskos 2017a). An Atlanta police sergeant elaborated on this phenomenon: “Most of our criminals, they go out each and every night hunting for guns, and the easiest way to get them is out of people’s cars. We’re finding that a majority of stolen guns that are getting in the hands of criminals and being used to commit crimes were stolen out of vehicles” (Freskos 2017c). In 2015, 70 percent of guns reported stolen in Atlanta came from cars and trucks (Freskos 2016). Another Atlanta police officer stated that weapons stolen from cars “are used in crimes to shoot people, to rob people” because criminals find these guns to be easy to steal and hard to trace. “For them, it doesn’t cost them anything to break into a car and steal a gun” (Freskos 2016).²³

²¹Of the 2,020 guns involved in the Bureau of Alcohol, Tobacco, Firearms, and Explosives probe dubbed ‘Operation Fast and Furious,’ 363 have been recovered in the United States and 227 have been recovered in Mexico. That leaves 1,430 guns unaccounted for” (Schwarzschild & Griffin 2011). Wayne LaPierre of the NRA was quoted as saying: “These guns are now, as a result of what [ATF] did, in the hands of evil people, and evil people are committing murders and crimes with these guns against innocent citizens” (Horwitz 2011).

²²In early December 2017, the sheriff in Jacksonville, Florida announced that his office knew of 521 guns that had been stolen so far in 2017—from unlocked cars alone! (Campbell 2017).

²³Examples abound: Tario Graham was shot and killed during a domestic dispute in February 2012 with a revolver stolen weeks earlier out of pickup truck six miles away in East Memphis (Perrusquia 2017). In Florida, a handgun stolen from an unlocked Honda Accord in mid-2014 helped kill a police officer a few days before Christmas that year (Sampson 2014). A gun stolen from a parked car during a Mardi Gras parade in 2017 was used a few days later to kill 15-year-old Nia Savage in Mobile, Alabama, on Valentine’s Day (Freskos 2017a).

Of course, the permit holders whose guns are stolen are not the killers, but they can be the but-for cause of the killings. Lost, forgotten, and misplaced guns are another dangerous byproduct of RTC laws.²⁴

c. Enhancing a culture of violence: The South has long had a higher rate of violent crime than the rest of the country. For example, in 2012, while the South had about one-quarter of the U.S. population, it had almost 41 percent of the violent crime reported to police (Fuchs 2013). Social psychologists have argued that part of the reason the South has a higher violent crime rate is that it has perpetuated a “subculture of violence” predicated on an aggrandized sense of one’s rights and honor that responds negatively to perceived insults. A famous experiment published in the *Journal of Personality and Social Psychology* found that southern males were more likely than northern males to respond aggressively to being bumped and insulted. This was confirmed by measurement of their stress hormones and their frequency of engaging in aggressive or dominant behavior after being insulted (Cohen et al. 1996). To the extent that RTC laws reflect and encourage this cultural response, they can promote violent crime not only by permit holders, but by all those with or without guns who are influenced by this crime-inducing worldview.

Even upstanding citizens, such as Donald Brown, a 56-year-old retired Hartford firefighter with a distinguished record of service, can fall prey to the notion that resort to a lawful concealed weapon is a good response to a heated argument. Brown was sentenced to seven years in prison in January 2018 by a Connecticut judge who cited his “poor judgment on April 24, 2015, when he drew his licensed 9mm handgun and fired a round into the abdomen of Lascelles Reid, 33.” The shooting was prompted by a dispute “over renovations Reid was performing at a house Brown owns” (Owens 2018). Once again, we see that the RTC permit was the pathway to serious violent crime by a previously law-abiding citizen.

d. Increasing violence by criminals: The argument for RTC laws is often predicated on the supposition that they will encourage good guys to have guns, leading only to benign effects on the behavior of bad guys. This is highly unlikely to be true.²⁵ Indeed, the

²⁴The growing TSA seizures in carry-on luggage are explained by the increase in the number of gun carriers who simply forget they have a gun in their luggage or briefcase (Williams & Waltrip 2004). A chemistry teacher at Marjory Stoneman Douglas High School in Parkland, Florida, who had said he would be willing to carry a weapon to protect students at the school, was criminally charged for leaving a loaded pistol in a public restroom. The teacher’s 9mm Glock was discharged by an intoxicated homeless man who found it in the restroom (Stanglin 2018).

²⁵Consider in this regard, David Friedman’s theoretical analysis of how right-to-carry laws will reduce violent crime: “Suppose one little old lady in ten carries a gun. Suppose that one in ten of those, if attacked by a mugger, will succeed in killing the mugger instead of being killed by him—or shooting herself in the foot. On average, the mugger is much more likely to win the encounter than the little old lady. But—also on average—every hundred muggings produce one dead mugger. At those odds, mugging is a very unattractive profession—not many little old ladies carry enough money in their purses to justify one chance in a hundred of being killed getting it. The number of muggers—and muggings—declines drastically, not because all of the muggers have been killed but because they have, rationally, sought safer professions” (Friedman 1990). There is certainly no empirical support for the conjecture that muggings will “decline drastically” in the wake of RTC adoption. What Friedman’s analysis overlooks is that muggers can decide not to mug (which is what Friedman posits) or they can decide to initiate their muggings by cracking the old ladies over the head or by being

evidence that gun prevalence in a state is associated with higher rates of lethal force by police (even controlling for homicide rates) suggests that police may be more fearful and shoot quicker when they are more likely to interact with an armed individual (Nagin forthcoming).²⁶ Presumably, criminals would respond in a similar fashion, leading them to arm themselves more frequently, attack more harshly, and shoot more quickly when citizens are more likely to be armed. In one study, two-thirds of prisoners incarcerated for gun offenses “reported that the chance of running into an armed victim was very or somewhat important in their own choice to use a gun” (Cook et al. 2009). Such responses by criminals will elevate the toll of the crimes that do occur.

Indeed, a panel data estimate over the years 1980 to 2016 reveals that the percentage of robberies committed with a firearm rises by 18 percent in the wake of RTC adoption ($t = 2.60$).²⁷ Our synthetic controls assessment similarly shows that the percentage of robberies committed with a firearm increases by 35 percent over 10 years ($t = 4.48$).²⁸ Moreover, there is no evidence that RTC laws are reducing the overall level of robberies: the panel data analysis associates RTC laws with a 9 percent higher level of overall robberies ($t = 1.85$) and the synthetic controls analysis suggests a 7 percent growth over 10 years ($t = 1.19$).

e. Impairing police effectiveness: According to an April 2016 report of the Council of Economic Advisers: “Expanding resources for police has consistently been shown to reduce crime; estimates from economic research suggests that a 10% increase in police size decreases crime by 3 to 10%” (CEA 2016:4). In summarizing the evidence on fighting crime in the *Journal of Economic Literature*, Aaron Chalfin and Justin McCrary note that adding police manpower is almost twice as effective in reducing violent crime as it is in reducing property crime (Chalfin & McCrary 2017). Therefore, anything that RTC laws do to occupy police time, from processing permit applications to checking for permit validity to dealing with gunshot victims, inadvertent gun discharges, and the staggering number of stolen guns is likely to have an opportunity cost expressed in higher violent crime.

The presence of more guns on the street can complicate the job of police as they confront (or shy away from) armed citizens. Daniel Nagin finds a pronounced positive association between statewide prevalence of gun ownership and police use of lethal force (Nagin forthcoming). A Minnesota police officer who stopped Philando Castile for a broken taillight shot him seven times only seconds after Castile indicated he had a permit to carry a weapon because the officer feared the permit holder might be reaching for the

prepared to shoot them if they start reaching for a gun (or even wear body armor). Depending on the response of the criminals to increased gun carrying by potential victims, the increased risk to the criminals may be small compared to the increased risk to the victims. Only an empirical evaluation can answer this question.

²⁶See footnotes 29–31 and accompanying text for examples of this pattern of police use of lethal force.

²⁷The panel data model uses the DAW explanatory variables set forth in Table 2.

²⁸The weighted average proportion of robberies committed by firearm in the year prior to RTC adoption (for states that adopted RTC between 1981 and 2014) is 36 percent while the similar proportion in 2014 for the same RTC states is 43 percent (and for non-RTC states is 29 percent).

gun. Another RTC permit holder, stranded in his disabled car early one morning on a Florida highway exit ramp, grabbed the gun he had legally purchased three days earlier when a police officer in plainclothes pulled up in a van with tinted windows and no lights. “It was not immediately clear what happened after [the officer] got out of his van, but the permit holder at some point started running ... and [the officer] fired six times,” killing the permit holder, whose body fell “about 80 to 100 feet from his vehicle,” with his undischarged handgun on the ground somewhere in between (Robles & Hauser 2015). After a similar encounter between an officer and a permit holder, the officer asked the gun owner: “Do you realize you almost died tonight?” (Kaste 2019).²⁹

A policemen trying to give a traffic ticket has more to fear if the driver is armed. When a gun is found in a car in such a situation, a greater amount of time is needed to ascertain the driver’s status as a permit holder. A lawful permit holder who happens to have forgotten his permit may end up taking up more police time through arrest and/or other processing.

Moreover, police may be less enthusiastic about investigating certain suspicious activities or engaging in effective crime-fighting actions given the greater risks that widespread gun carrying poses to them, whether from permit holders or the criminals who steal their guns.³⁰ In a speech at the University of Chicago Law School in October 2015, then-FBI Director James Comey argued that criticism of overly aggressive policing led officers to back away from more involved policing, causing violent crime to rise (Donohue 2017a). If the more serious concern of being shot by an angry gun toter impairs effective policing, the prospect of increased crime following RTC adoption could be far more substantial than the issue that Comey highlighted.³¹

²⁹A permit to carry instructor has posted a YouTube video about “How to inform an officer you are carrying a handgun and live” that is designed to “keep yourself from getting shot unintentionally” by the police. The video, which has over 4.2 million views, has generated comments from non-Americans that it “makes the US look like a war zone” and leads to such unnatural and time-consuming behavior that “an English officer ... would look at you like a complete freak” (Soderling 2016).

³⁰“Every law enforcement officer working today knows that any routine traffic stop, delivery of a warrant or court order, or response to a domestic disturbance anywhere in the country involving people of any race or age can put them face to face with a weapon. Guns are everywhere, not just in the inner city” (Wilson 2016). In offering an explanation for why the United States massively leads the developed world in police shootings, criminologist David Kennedy stated: “Police officers in the United States in reality need to be conscious of and are trained to be conscious of the fact that literally every single person they come in contact with may be carrying a concealed firearm.” For example, police in England and Wales shot and killed 55 people over the 25-year period from 1990–2014, while in just the first 24 days of 2015, the United States (with six times the population) had a higher number of fatal shootings by police (Lopez 2018).

³¹A vivid illustration of how even the erroneous perception that someone accosted by the police is armed can lead to deadly consequences is revealed in the chilling video of five Arizona police officers confronting an unarmed man they incorrectly believed had a gun. During the prolonged encounter, the officers shouted commands at an intoxicated 26-year-old father of two, who begged with his hands in the air not to be shot. The man was killed by five bullets when, following orders to crawl on the floor toward police, he paused to pull up his slipping pants. A warning against the open carry of guns issued by the San Mateo County, California, Sheriff’s Office makes the general point that law enforcement officers become hyper-vigilant when encountering an armed individual: “Should the gun carrying person fail to comply with a law enforcement instruction or move in a way that could be construed as threatening, the police are forced to respond in kind for their own protection. It’s well and good in hindsight to say the gun carrier was simply ‘exercising their rights’ but the result could be deadly” (Lunny 2010).

The presence of multiple gun carriers can also complicate police responses to mass shootings and other crimes. When police arrived at an Alabama mall in November 2018, they saw a 21-year-old concealed carry permit holder with gun drawn, and mistakenly killed him, thinking he was the shooter. In fact, the dead man had been assisting and protecting shoppers, and the real shooter escaped (McLaughlin & Holcombe 2018). Another benign intervention that ended in tragedy for the good guy with a gun occurred in July 2018 when police officers arrived as a “good Samaritan” with a concealed carry permit was trying to break up a fight in Portland, Oregon. The police saw the gun held by the permit holder—a Navy veteran, postal worker, and father of three—and in the confusion shot and killed him (Gueverra 2018).

Good guys with guns also can interfere with police anti-crime efforts. For example, police reported that when a number of Walmart customers (fecklessly) pulled out their weapons during a shooting on November 1, 2017, their “presence ‘absolutely’ slowed the process of determining who, and how many, suspects were involved in the shootings, said Thornton [Colorado] police spokesman Victor Avila” (Simpson 2017).

Similarly, in 2014, a concealed carry permit holder in Illinois fired two shots at a fleeing armed robber at a phone store, thereby interfering with a pursuing police officer. According to the police: “Since the officer did not know where the shots were fired from, he was forced to terminate his foot pursuit and take cover for his own safety” (Glanton & Sadovi 2014).

Indeed, preventive efforts to get guns off the street in high-crime neighborhoods are less feasible when carrying guns is presumptively legal. The passage of RTC laws normalizes the practice of carrying guns in a way that may enable criminals to carry guns more readily without prompting a challenge, while making it harder for the police to know who is and who is not allowed to possess guns in public.

Furthermore, negligent discharges of guns, although common, rarely lead to charges of violent crime but they can take up valuable police time for investigation and in determining whether criminal prosecution or permit withdrawal is warranted. For example, on November 16, 2017, Tennessee churchgoers were reflecting on the recent Texas church massacre in Sutherland Springs when a permit holder mentioned he always carries his gun, bragging that he would be ready to stop any mass shooter. While proudly showing his Ruger handgun, the permit holder inadvertently shot himself in the palm, causing panic in the church as the bullet “ripped through [his wife’s] lower left abdomen, out the right side of her abdomen, into her right forearm and out the backside of her forearm. The bullet then struck the wall and ricocheted, landing under the wife’s wheelchair.” The gun discharge prompted a 911 call, which in the confusion made the police think an active shooting incident was underway. The result was that the local hospital and a number of schools were placed on lockdown for 45 minutes until the police finally ascertained that the shooting was accidental (Eltagouri 2017).³²

³²Negligent discharges by permit holders have occurred in public and private settings from parks, stadiums, movie theaters, restaurants, and government buildings to private households (WFTV 2015; Heath 2015). Thirty-nine-year-old Mike Lee Dickey, who was babysitting an eight-year-old boy, was in the bathroom removing his handgun from his waistband when it discharged. The bullet passed through two doors, before striking the child in his arm while he slept in a nearby bedroom (Associated Press 2015). In April 2018, a 21-year-old pregnant mother of two in

Everything that takes up added police time or complicates the job of law enforcement will serve as a tax on police, rendering them less effective on the margin, and thereby contributing to crime. Indeed, this may in part explain why RTC states tend to increase the size of their police forces (relative to nonadopting states) after RTC laws are passed, as shown in Table 1.³³

B. A Simple Difference-in-Differences Analysis

We begin by showing how violent crime evolved over our 1977–2014 data period for RTC and non-RTC states.³⁴ Figure 1 depicts percentage changes in the violent crime rate over our entire data period for three groups of states: those that never adopted RTC laws, those that adopted RTC laws sometime between 1977 and before 2014, and those that adopted RTC laws prior to 1977. It is noteworthy that the 42.3 percent drop in violent crime in the nine states that never adopted RTC laws is almost an order of magnitude greater than the 4.3 percent reduction experienced by states that adopted RTC laws during our period of analysis.³⁵

The NRC Report presented a “no-controls” estimate, which is just the coefficient estimate on the variable indicating the date of adoption of a RTC law in a crime rate panel data model with state and year fixed effects. According to the NRC Report: “Estimating the model using data to 2000 shows that states adopting right-to-carry laws saw 12.9 percent increases in violent crime—and 21.2 percent increases in property crime—relative to national crime patterns.” Estimating this same model using 14 additional years of data (through 2014) and 11 additional adopting states (listed at the bottom of Appendix Table C1) reveals that the average postpassage increase in violent crime was

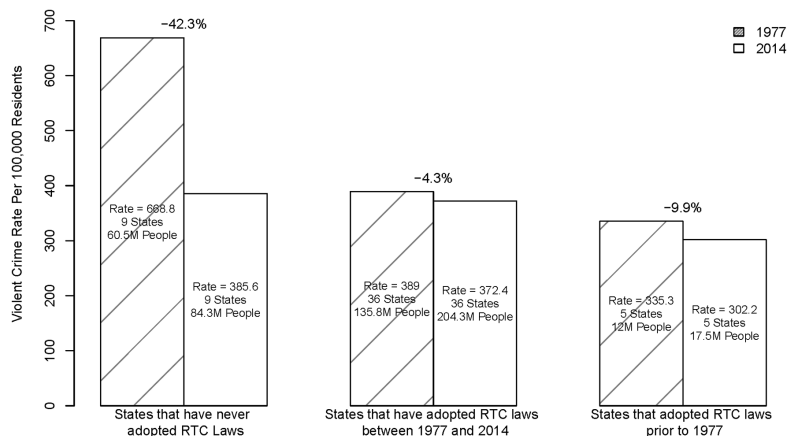
Indiana was shot by her three-year-old daughter when the toddler’s father left the legal but loaded 9mm handgun between the console and the front passenger seat after he exited the vehicle to go inside a store. The child climbed over from the backseat and accidentally fired the gun, hitting her mother through the upper right part of her torso. (Palmer 2018) See also Savitsky (2019) (country western singer Justin Carter dies when the gun in his pocket discharges and hits him in the face); Schwarz (2014) (Idaho professor shoots himself in foot during class two months after state legalizes guns on campuses); Murdock (2018) (man shoots himself in the groin with gun in his waistband in the meat section of Walmart in Buckeye, Arizona); Barbash (2018) (California teacher demonstrating gun safety accidentally discharges weapon in a high school classroom in March 2018, injuring one student); Fortin (2018) (in February 2018, a Georgia teacher fired his gun while barricaded in his classroom); US News (2018) (in April 2018, an Ohio woman with a valid concealed carry permit accidentally killed her two-year-old daughter at an Ohio hotel while trying to turn on the gun’s safety); and Fox News (2016) (“the owner of an Ohio gun shop was shot and killed when a student in a concealed carry permit class accidentally discharged a weapon,” striking the owner in the neck in a different room after the bullet passed through a wall).

³³See Adda et al. (2014), describing how local depenalization of cannabis enabled the police to reallocate resources, thereby reducing violent crime.

³⁴The FBI violent crime category includes murder, rape, robbery, and aggravated assault.

³⁵Over the same 1977–2014 period, the states that avoided adopting RTC laws had substantially smaller increases in their rates of incarceration and police employment. The nine never-adopting states increased their incarceration rate by 205 percent, while the incarceration rates in the adopting states rose by 262 and 259 percent, for those adopting RTC laws before and after 1977, respectively. Similarly, the rate of police employment rose by 16 percent in the never-adopting states and by 38 and 55 percent for those adopting before and after 1977, respectively.

Figure 1: The decline in violent crime rates has been far greater in states with no RTC laws, 1977–2014.



DATA SOURCES: UCR for crime rates; Census for state populations.

NOTE: Illinois excluded since its concealed carry law did not go into effect until 2014. From 1977–2013, the violent crime rate in Illinois fell by 36 percent, from 631 to 403 crimes per 100,000 people.

20.2 percent, while the comparable increase in property crime was 19.2 percent (both having *p* values less than 5 percent).³⁶

Of course, it does not prove that RTC laws increase crime simply because RTC states experience a worse postpassage crime pattern. For example, it might be the case that some states decided to fight crime by allowing citizens to carry concealed handguns while others decided to hire more police and incarcerate a greater number of convicted criminals. If police and prisons were more effective in stopping crime, the “no-controls” model might show that the crime experience in RTC states was worse than in other states even if this were not a true causal result of the adoption of RTC laws. As it turns out, though, RTC states not only experienced higher rates of violent crime but they also had larger increases in incarceration and police than other states. Table 1 provides panel data evidence on how incarceration and two measures of police employment changed after RTC adoption (relative to nonadopting states). All three measures rose in RTC states, and the 7–8 percent greater increases in police in RTC states are statistically significant. In other words, Table 1 confirms that RTC states did *not* have relatively declining rates of

³⁶The dummy variable model reports the coefficient associated with a RTC variable that is given a value of 0 when a RTC law is not in effect in that year, a value of 1 when a RTC law is in effect that entire year, and a value equal to the portion of the year a RTC law is in effect otherwise. The date of adoption for each RTC state is shown in Appendix Table A1. Note the fact that violent crime was noticeably higher in 1977 in the nine states that did not adopt RTC laws indicates that it will be particularly important that the parallel trends requirement of a valid panel data analysis is established, which is an issue to which we carefully attend in Section III.A.3. All our appendices are posted online at https://works.bepress.com/john_donohue/.

Table 1: Panel Data Estimates Showing Greater Increases in Incarceration and Police Following RTC Adoption: State- and Year-Fixed Effects, and No Other Regressors, 1977–2014

	<i>Incarceration</i>	<i>Police Employment per 100k</i>	<i>Police Officers per 100k</i>
	(1)	(2)	(3)
Dummy variable model	6.78 (6.22)	8.39*** (3.15)	7.08** (2.76)

NOTE: OLS estimations include state- and year-fixed effects and are weighted by population. Robust standard errors (clustered at the state level) are provided next to point estimates in parentheses. The police employment and sworn police officer data are from the Uniform Crime Reports (UCR). The source of the incarceration rate is the Bureau of Justice Statistics (2014). * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. All figures reported in percentage terms.

incarceration or total police employees after adopting their RTC laws that might explain their comparatively poor postpassage crime performance.

III. A PANEL DATA ANALYSIS OF RTC LAWS

A. Estimating Two Models on the Full Data Period 1977–2014

We have just seen that RTC law adoption is followed by *higher* rates of violent and property crime (relative to national trends) and that the elevated crime levels after RTC law adoption occur despite the fact that RTC states actually invested relatively more heavily in prisons and police than non-RTC states. While the theoretical predictions about the effect of RTC laws on crime are indeterminate, these two empirical facts based on the actual patterns of crime and crime-fighting measures in RTC and non-RTC states suggest that the most plausible working hypothesis is that RTC laws *increase* crime. The next step in a panel data analysis of RTC laws would be to test this hypothesis by introducing an appropriate set of explanatory variables that plausibly influence crime.

The choice of these variables is important because any variable that both influences crime and is simultaneously correlated with RTC laws must be included if we are to generate unbiased estimates of the impact of RTC laws. At the same time, including irrelevant and/or highly collinear variables can also undermine efforts at valid estimation of the impact of RTC laws. At the very least, it seems advisable to control for the levels of police and incarceration because these have been the two most important criminal justice policy instruments in the battle against crime.

1. The DAW Panel Data Model

In addition to the state and year fixed effects of the no-controls model and the identifier for the presence of an RTC law, our preferred “DAW model” includes an array of other factors that might be expected to influence crime, such as the levels of police and incarceration, various income, poverty, and unemployment measures, and six demographic controls designed to capture the presence of males in three racial categories (black, white, other) in two high-crime age groupings (15–19 and 20–39). Table 2 lists the full

Table 2: Table of Explanatory Variables for Four Panel Data Studies

<i>Explanatory Variables</i>	<i>DAW</i>	<i>LM</i>
Right-to-carry law	x	x
Lagged per capita incarceration rate	x	
Lagged police staffing per 100,000 residents	x	
Poverty rate	x	
Unemployment rate	x	
Per capita ethanol consumption from beer	x	
Percentage of state population living in metropolitan statistical areas (MSA)	x	
Real per capita personal income	x	x
Real per capita income maintenance		x
Real per capita retirement payments		x
Real per capita unemployment insurance payments		x
Population density		x
Lagged violent or property arrest rate		x
State population		x
6 Age-sex-race demographic variables —all 6 combinations of black, white, and other males in 2 age groups (15–19, 20–39) indicating the percentage of the population in each group	x	
36 Age-sex-race demographic variables —all possible combinations of black, white, and other males in 6 age groups (10–19, 20–29, 30–39, 40–49, 50–64, and over 65) and repeating this all for females, indicating the percentage of the population in each group		x

NOTE: The DAW model is advanced in this article and the LM model was previously published by Lott and Mustard.

set of explanatory variables for both the DAW model and the comparable panel data model used by Lott and Mustard (LM).³⁷

Mathematically, the simple dummy model takes the following form:

$$\ln(\text{crime rate}_{it}) = \beta X_{it} + \gamma RTC_{it} + \alpha_t + \delta_i + \varepsilon_{it} \quad (1)$$

where γ is the coefficient on the RTC dummy, reflecting the average estimated impact of adopting a RTC law on crime. The matrix X_{it} contains either the DAW or LM covariates

³⁷While we attempt to include as many state-year observations in these regressions as possible, District of Columbia incarceration data are missing after the year 2001. In addition, a handful of observations are also dropped from the LM regressions owing to states that did not report any usable arrest data in various years. Our regressions are performed with Huber-White robust standard errors that are clustered at the state level, and we lag the arrest rates used in the LM regression models. The rationales underlying both choices are described in more detail in Aneja et al. (2014). All the regressions presented in this article are weighted by state population.

Table 3: Panel Data Estimates Suggesting that RTC Laws Increase Violent and Property Crime: State- and Year-Fixed Effects, DAW Regressors, 1979–2014

	<i>Murder Rate</i>	<i>Firearm Murder Rate</i>	<i>Nonfirearm Murder Rate</i>	<i>Violent Crime Rate</i>	<i>Property Crime Rate</i>
	(1)	(2)	(3)	(4)	(5)
Dummy variable model	2.27 (5.05)	2.90 (6.74)	1.53 (3.32)	9.02*** (2.90)	6.49** (2.74)

NOTE: All models include year- and state-fixed effects, and OLS estimates are weighted by state population. Robust standard errors (clustered at the state level) are provided next to point estimates in parentheses. The violent and property crime data are from the Uniform Crime Reports (UCR) while the murder data are from the National Vital Statistics System (NVSS). Six demographic variables (based on different age-sex-race categories) are included as controls in the regression above. Other controls include the lagged incarceration rate, the lagged police employee rate, real per capita personal income, the unemployment rate, poverty rate, beer, and percentage of the population living in MSAs. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. All figures reported in percentage terms.

and demographic controls for state i in year t . The vectors α and δ are year and state fixed effects, respectively, while ε_{it} is the error term.

The DAW panel data estimates of the impact of RTC laws on crime are shown in Table 3.³⁸ The results are consistent with, although smaller in magnitude than, those observed in the no-controls model: RTC laws on average increased violent crime by 9.0 percent and property crime by 6.5 percent in the years following adoption.³⁹ The effect of RTC laws on murder is seen in Table 3 to be very imprecisely estimated and not statistically significant.⁴⁰

We should also note one caveat to our results. Panel data analysis assumes that the treatment in any one state does not influence crime in nontreatment states. However, as we noted above,⁴¹ RTC laws tend to lead to substantial increases in gun thefts and those guns tend to migrate to states with more restrictive gun laws, where they elevate violent crime. This flow of guns from RTC to non-RTC states has been documented by gun trace data (Knight 2013), and Olson et al. (2019) find that “firearm trafficking from states with less restrictive firearm legislation to neighboring states with more restrictive firearm legislation

³⁸The complete set of estimates for all explanatory variables (except the demographic variables) for the DAW and LM dummy models are shown in Appendix Table B1.

³⁹Defensive uses of guns are more likely for violent crimes because the victim will clearly be present. For property crimes, the victim is typically absent, thus providing less opportunity to defend with a gun. It is unclear whether the many ways in which RTC laws could lead to more crime, which we discuss in Section II.A.2, would be more likely to facilitate violent or property crime, but our intuition is that violent crime would be more strongly influenced, which is in fact what Table 3 suggests.

⁴⁰We thank Phil Cook for informing us that UCR murder data are both less complete and less discerning than murder data collected by the National Vital Statistics. Note that we subtract all cases of justifiable homicides from the murder counts in our own Vital Statistics data.

⁴¹See text at footnotes 20–22.

increases firearm homicide rates in those restrictive states.”⁴² As a result, our panel data estimates of the impact of RTC laws are downward biased by the amount that RTC laws induce crime spillovers into non-RTC states.⁴³ One police investigation revealed that of the 224 guns a single gun trafficker in the DC area was known to have sold in just five months of 2015, 94 were later found at crime scenes from Virginia to New York (Hermann & Weiner 2019).

2. The LM Panel Data Model

Table 2’s recitation of the explanatory variables contained in the Lott and Mustard (LM) panel data model reveals there are no controls for the levels of police and incarceration in each state, even though a substantial literature has found that these factors have a large impact on crime. Indeed, as we saw in Table 1, both factors grew substantially and statistically significantly after RTC law adoption. A Bayesian analysis of the impact of RTC laws found that “the incarceration rate is a powerful predictor of future crime rates,” and specifically faulted this omission from the Lott and Mustard model (Strnad 2007:201, n.8). We have discussed an array of infirmities with the LM model in Aneja et al. (2014), including their reliance on flawed pseudo-arrest rates, and highly collinear demographic variables.

As noted in Aneja et al. (2014):

The Lott and Mustard arrest rates ... are a ratio of arrests to crimes, which means that when one person kills many, for example, the arrest rate falls, but when many people kill one person, the arrest rate rises, since only one can be arrested in the first instance and many can in the second. The bottom line is that this “arrest rate” is not a probability and is frequently greater than one because of the multiple arrests per crime. For an extended discussion on the abundant problems with this pseudo arrest rate, see Donohue and Wolfers (2009).

The LM arrest rates are also econometrically problematic since the denominator of the arrest rate is the numerator of the dependent variable crime rate, improperly leaving the dependent variable on both sides of the regression equation. We lag the arrest rates by one year to reduce this problem of ratio bias.

Lott and Mustard’s use of 36 demographic variables is also a potential concern. With so many enormously collinear variables, the high likelihood of introducing noise into the estimation process is revealed by the wild fluctuations in the coefficient estimates on these variables. For example, consider the LM explanatory variables “neither black nor white male aged 30–39” and the identical corresponding female category. The LM dummy variable model for violent crime suggests that the male group will significantly

⁴²“Seventy-five percent of traceable guns recovered by authorities in New Jersey [a non-RTC state] are purchased in states with weaker gun laws, according to ... firearms trace data ... compiled by the federal Bureau of Alcohol, Tobacco, Firearms and Explosives ... between 2012 and 2016” (Pugliese 2018). See also Freskos (2018b).

⁴³Some of the guns stolen from RTC permit holders may also end up in foreign countries, which will stimulate crime there but not bias our panel data estimates. For example, a recent analysis of guns seized by Brazilian police found that 15 percent came from the United States. Since many of these were assault rifles, they were probably not guns carried by American RTC permit holders (Paraguassu & Brito 2018).

Table 4: Panel Data Estimates of the Impact of RTC Laws: State-and Year-Fixed Effects, Using Actual and Modified LM Regressors, 1977–2014

<i>Panel A: LM Regressors Including 36 Demographic Variables</i>					
	<i>Murder Rate</i>	<i>Firearm Murder Rate</i>	<i>Nonfirearm Murder Rate</i>	<i>Violent Crime Rate</i>	<i>Property Crime Rate</i>
	(1)	(2)	(3)	(4)	(5)
Dummy variable model	-5.17 (3.33)	-3.91 (4.82)	-5.70** (2.45)	-1.38 (3.16)	-0.34 (1.71)
<i>Panel B: LM Regressors with 6 DAW Demographic Variables</i>					
	<i>Murder Rate</i>	<i>Firearm Murder Rate</i>	<i>Nonfirearm Murder Rate</i>	<i>Violent Crime Rate</i>	<i>Property Crime Rate</i>
	(1)	(2)	(3)	(4)	(5)
Dummy variable model	3.75 (5.92)	4.34 (7.85)	2.64 (4.02)	10.03** (4.81)	7.59** (3.72)
<i>Panel C: LM Regressors with 6 DAW Demographic Variables and Adding Controls for Incarceration and Police</i>					
	<i>Murder Rate</i>	<i>Firearm Murder Rate</i>	<i>Nonfirearm Murder Rate</i>	<i>Violent Crime Rate</i>	<i>Property Crime Rate</i>
	(1)	(2)	(3)	(4)	(5)
Dummy variable model	4.99 (5.50)	5.96 (7.20)	3.76 (4.29)	10.05** (4.54)	8.10** (3.63)

NOTE: All models include year- and state-fixed effects, and OLS estimates are weighted by state population. Robust standard errors (clustered at the state level) are provided next to point estimates in parentheses. In Panel A, 36 demographic variables (based on different age-sex-race categories) are included as controls in the regressions above. In Panel B, only six demographic variables are included. In Panel C, only six demographic variables are included and controls are added for incarceration and police. For all three panels, other controls include the previous year’s violent or property crime arrest rate (depending on the crime category of the dependent variable), state population, population density, real per capita income, real per capita unemployment insurance payments, real per capita income maintenance payments, and real retirement payments per person over 65. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. All figures reported in percentage terms.

increase crime (the coefficient is 219), but their female counterparts have an even greater dampening effect on crime (with a coefficient of -258). Both conflicting estimates (not shown in Appendix Table B1) are statistically significant at the 0.01 level, and they are almost certainly picking up noise rather than revealing true relationships. Bizarre results are common in the LM estimates among these 36 demographic variables.⁴⁴

⁴⁴Aneja et al. (2014) test for the severity of the multicollinearity problem using the 36 LM demographic variables, and the problem is indeed serious. The variance inflation factor (VIF) is shown to be in the range of 6 to 7 for the RTC variable in the LM dummy model when the 36 demographic controls are used. Using the six DAW variables reduces the multicollinearity for the RTC dummy to a tolerable level (with VIFs always below the desirable threshold of 5).

Table 4, Panel A shows the results of the LM panel data model estimated over the period 1977–2014. As seen above, the DAW model generated estimates that RTC laws raised violent and property crime (in the dummy model of Table 3), while the estimated impact on murders was too imprecise to be informative. The LM model generates no statistically significant estimates, except for an apparent decline in non-firearm-related murders. We can almost perfectly restore the DAW Table 3 findings, however, by simply limiting the inclusion of 36 highly collinear demographic variables to the more typical array used in the DAW regressions, as seen in Panel B of Table 4. This modified LM dummy variable model suggests that RTC laws increase violent and property crime, mimicking the DAW dummy variable model estimates, and this same finding persists if we add in controls for police and incarceration, as seen in Panel C of Table 4.

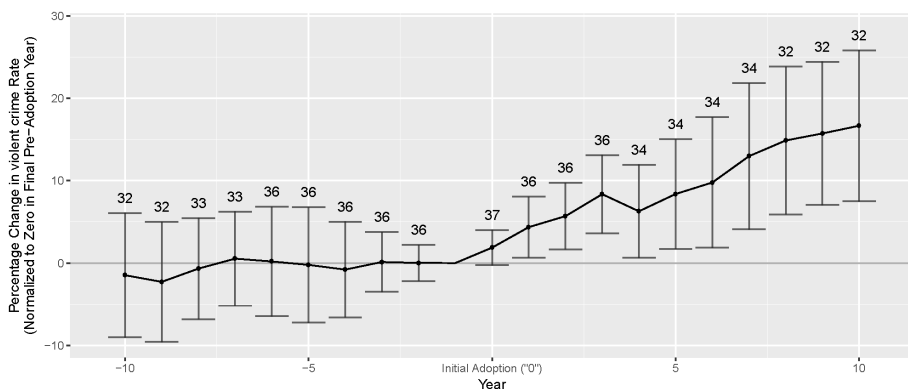
3. Testing the DAW and LM Models for the Parallel Trends Assumption

Many researchers are content to present panel data results such as those shown in Tables 3 and 4 without establishing their econometric validity. This can be a serious mistake. We have already registered concerns about the choice of controls included in the LM model, but, as we will see, the LM model regressions in Panel A of Table 4—including the spurious finding that RTC laws reduce non-firearm homicides—uniformly violate the critical assumption of parallel trends. In sharp contrast, the DAW model illustrates nearly perfect parallel trends in the decade prior to RTC adoption for violent crime and sufficiently satisfies this assumption in three of the other four regressions in Table 3 (murder, non-firearm murder, and property crime).

To implement this test and to provide more nuanced estimates of the impact of RTC laws on crime than in the simple dummy models of Tables 3 and 4, we ran regressions showing the values on yearly dummy variables for 10 years prior to RTC adoption to 10 years after RTC adoption. If the key parallel trends assumption of panel data analysis is valid, we should see values of the pre-adoption dummies that show no trend and are close to zero. Figure 2 shows that the DAW violent crime model performs extremely well: the pre-adoption dummies are virtually all zero (and hence totally flat) for the eight years prior to adoption, and violent crime starts rising in the year of adoption, showing statistically significant increases after the law has been in effect for at least a full year. The upward trend in violent crime continues for the entire decade after adoption. Figure 2 also highlights that the single dummy models of Tables 3 and 4 (which implicitly assume an immediate and constant post-adoption impact on crime) are mis-specified. Importantly, we can now see the exact timing and pattern of the estimated impact on crime, which can, and in this case does, provide further support for a causal interpretation of the estimated increase in violent crime.

In contrast to the ideal performance of the DAW violent crime model, all of the Table 4 regressions using the LM model perform extremely poorly. For example, consider the LM model for firearm murder depicted in Figure 3, which shows that there is

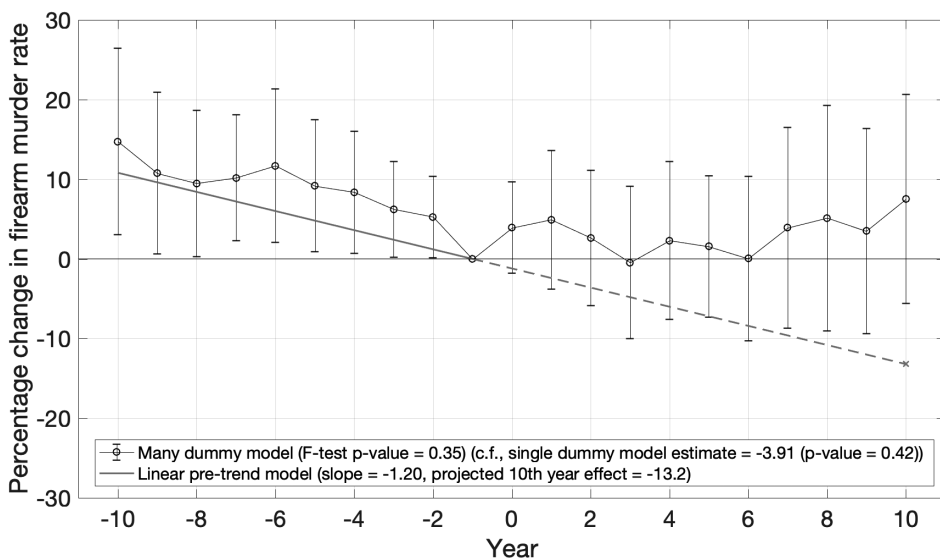
Figure 2: The impact of RTC laws on violent crime, DAW model, 1979–2014.



NOTE: We regress crime on dummies for pre- and post-passage years and DAW covariates. Reference year is year before adoption and adoption year is first year with RTC in place at any time, meaning that in states that adopt after January 1, this will capture only a partial effect of RTC laws. We display the 95 percent confidence interval for each estimate using cluster-robust standard errors and show the number of states that contribute to each estimate.

an enormously steep downward trend in the values of the pre-adoption dummies. Indeed, we see that the downward trend reverses just at the time of adoption of the RTC law and after six years we observe statistically significant increases in firearm

Figure 3: The impact of RTC laws on firearm murder, LM model, 1977–2014



murder above the prior trend. Thus, while Table 4 ostensibly showed a statistically insignificant 3.9 percent drop in violent crime, the more discerning analysis of Figure 3 shows that that estimate is econometrically invalid, given such an influential violation of the parallel trends requirement. In fact, the LM model estimated for Figure 3 provides evidence that the adoption of RTC laws reversed a previous benign trend starting exactly at the time of RTC adoption and led to higher levels of firearm homicide.

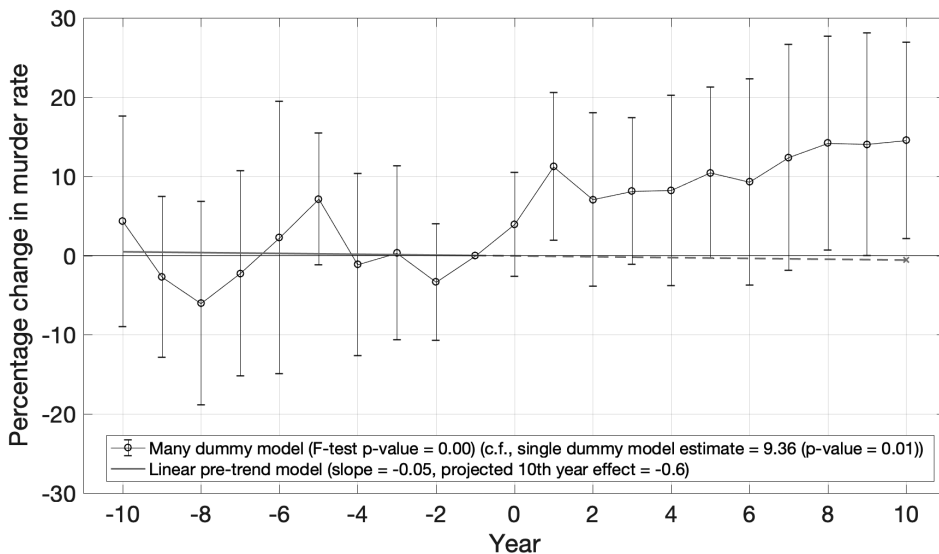
Appendix D depicts the same year-by-year estimates for the other crimes using both the DAW and LM models. It is worth noting that, for our entire data period, the four DAW and LM murder and firearm murder figures show an apparent malign break in trend at the time of RTC adoption, while the trend for non-firearm murder remains unchanged in the DAW and LM models. The unchanged downward trend in the LM non-firearm model illustrates the violation of the parallel trends assumption, invalidating the anomalous finding for that crime in Panel A of Table 4.⁴⁵

For the DAW and LM property crime panel data estimates, we see almost the same pattern. While the pre-adoption performance of the DAW property crime model (see Appendix Figure D2) is not quite as perfect as it was for violent crime, it still shows a roughly flat pattern for the eight years prior to adoption, followed by a persistent pattern of increasing property crime in the 10 years after RTC adoption. The increase in property crime turns statistically significant at the time of adoption. In Appendix Figure D3, however, we again see the same deficient pattern observed for the LM model in Appendix Figure D1: property crime falls in the 10 years prior to adoption, and the pattern reverses itself, leading to increasing property crime in the decade following RTC adoption.

We also conducted a panel data assessment looking at the 11 states that adopted RTC laws in the period from 2000–2014 when the confounding effect of the crack epidemic had subsided. The results provide further support that RTC laws increase crime, including estimates that overall murder and firearm murder rise substantially with RTC adoption. See further discussion and relevant figures and estimates in Appendix C. Figure 4 shows the year-by-year estimated effect of RTC laws on overall murder for the DAW model for this postcrack time period. The figure shows a flat pretrend (albeit with some variance around it) and then a sizeable jump in murder starting just at the year of RTC adoption. The LM model shows substantially the same statistically significant increase in murder.

⁴⁵Appendix Figure D1 also illustrates why the LM dummy model estimate on violent crime in Panel A of Table 4 was not positive and statistically significant (as it was for the DAW model in Table 3 and the modified LM models in Panels B and C of Table 4): Appendix Figure D1 reveals that, for the LM model, violent crime was trending down throughout the pre-adoption period, dropping from 5 percentage points to zero over that decade, at which point it reverses and violent crime increases to roughly a 6 percent increase by 10 years after RTC adoption. The v-shape pattern over that two-decade period leads the LM dummy model to obscure the increase in violent crime that is clearly seen in Appendix Figure D1.

Figure 4: The impact of RTC laws on murder, DAW model, 2000–2014



B. Summary of Panel Data Analysis

The uncertainty about the impact of RTC laws on crime expressed in the NRC Report was based on an analysis of data only through 2000. The preceding evaluation of an array of different specifications over the full data period from the late 1970s through 2014 as well as in the postcrack period has given consistent evidence that something bad happened to murder and violent and property crime right at the time of RTC adoption. The most statistically significant crime increases for the full period were seen for DAW violent and property crime. For the postcrack period, the largest and most highly statistically significant increases were seen for murder and firearm murder.

Other work has also provided evidence that RTC laws increase murder and/or overall violent crime—see Zimmerman (2014), examining postcrack-era data and the recent work by Donohue (2017b) and Siegel et al. (2017) concluding that RTC laws increase firearm and handgun homicide. Work by McElroy and Wang (2017) reinforces this conclusion, with results from a dynamic model that accounts for forward-looking behavior finding that violent crime would be one-third lower if RTC laws had not been passed. We discuss other recent published studies finding that RTC laws increase violent crime in Appendix C.

Despite the substantial panel data evidence in the post-NRC literature that supports the finding of the pernicious influence of RTC laws on crime, the NRC suggestion that

new techniques should be employed to estimate the impact of these laws is fitting. The important paper by Strnad (2007) used a Bayesian approach to argue that none of the published models used in the RTC evaluation literature rated highly in his model selection protocol when applied to data from 1977–1999.

Durlauf et al. attempt to sort out the different specification choices in evaluating RTC laws by using their own Bayesian model averaging approach using county data from 1979–2000. Applying this technique, the authors find that in their preferred spline (trend) model, RTC laws elevate violent crime in the three years after RTC adoption: “As a result of the law being introduced, violent crime increases in the first year and continues to increase afterwards” (2016:50). By the third year, their preferred model suggests a 6.5 percent increase in violent crime. Since their paper only provides estimates for three postpassage years, we cannot draw conclusions beyond this but note that their finding that violent crime increases by over 2 percent per year owing to RTC laws is a substantial crime increase. Moreover, the authors note: “For our estimates, the effect on crime of introducing guns continues to grow over time” (2016:50).⁴⁶

Owing to the substantial challenges of estimating effects from observational data, it will be useful to see if yet another statistical approach that has different attributes from the panel data methodology can enhance our understanding of the impact of RTC laws. The rest of this article will use this synthetic control approach, which has been deemed “arguably the most important innovation in the policy evaluation literature in the last 15 years” (Athey & Imbens 2017).

IV. ESTIMATING THE IMPACT OF RTC LAWS USING SYNTHETIC CONTROLS

The synthetic control methodology, which is becoming increasingly prominent in economics and other social sciences, is a promising new statistical approach for addressing the impact of RTC laws.⁴⁷ While most synthetic control papers focus on a single

⁴⁶While our analysis focused on crime at the state level, there is obviously heterogeneity in crime rates within states, which is amalgamated into our population-weighted state average figures. A paper by Kovandzic et al. (KMV) buttresses the view that our state-focused estimates are not giving a misleading impression of the impact of RTC laws on violent crime. KMV limited their analysis to urban areas within each state, estimating the impact of RTC laws on crime using a panel data analysis from 1980–2000 on 189 cities with a population of 100,000 or more (Kovandzic et al. 2005). Although they did not estimate an overall violent crime effect, they did report that RTC laws were associated with a highly statistically significant increase in the rate of aggravated assault, the largest single component of violent crime. Their figures suggest that RTC laws led to a 20.1 percent increase in aggravated assault in the 10 years following adoption.

⁴⁷The synthetic control methodology has been deployed in a wide variety of fields, including health economics (Nonnemaker et al. 2011), immigration economics (Bohn et al. 2014), political economy (Keele 2009), urban economics (Ando 2015), the economics of natural resources (Mideksa 2013), and the dynamics of economic growth (Cavallo et al. 2013).

treatment in a single geographic region, we look at 33 RTC adoptions occurring over three decades throughout the country. For each adopting (“treated”) state we will find a weighted average of other states (“a synthetic control”) designed to serve as a good counterfactual for the impact of RTC laws because it had a pattern of crime similar to that of the adopting state prior to RTC adoption. By comparing what actually happened to crime after RTC adoption to the crime performance of the synthetic control over the same period, we generate estimates of the causal impact of RTC laws on crime.⁴⁸

A. *The Basics of the Synthetic Control Methodology*

The synthetic control method attempts to generate representative counterfactual units by comparing a treatment unit (i.e., a state adopting an RTC law) to a set of control units across a set of explanatory variables over a preintervention period. The algorithm searches for similarities between the treatment state of interest and the control states during this period and then generates a synthetic counterfactual unit for the treatment state that is a weighted combination of the component control states.⁴⁹ Two conditions are placed on these weights: they must be nonnegative and they must sum to 1. In general, the matching process underlying the synthetic control technique uses pretreatment values of both the outcome variable of interest (in our case, some measure of crime) and other predictors believed to influence this outcome variable.⁵⁰ For the reasons set forth in Appendix K, we use every lag of the dependent variable as predictors in the DAW and LM specifications. Once the synthetic counterfactual is generated and the weights associated with each control unit are assigned, the *synth* program then calculates values for the outcome variable associated with this counterfactual and the root mean squared prediction error (RMSPE) based on differences between the treatment and synthetic control units in the pretreatment period. The effect of the treatment can then be estimated by comparing the actual values of the dependent variable for the treatment unit to the corresponding values of the synthetic control.

B. *Generating Synthetic Controls for 33 States Adopting RTC Laws During Our Data Period*

To illustrate the procedure outlined above, consider the case of Texas, whose RTC law went into effect on January 1, 1996. The potential control group for each treatment state

⁴⁸For a more detailed technical description of this method, we direct the reader to Abadie and Gardeazabal (2003) and Abadie et al. (2010, 2014).

⁴⁹Our analysis is done in Stata using the *synth* software package developed by Alberto Abadie, Alexis Diamond, and Jens Hainmueller.

⁵⁰Roughly speaking, the algorithm that we use finds \mathbf{W} (the weights of the components of the synthetic control) that minimizes $\sqrt{(\mathbf{X}_1 - \mathbf{X}_0\mathbf{W})\mathbf{V}(\mathbf{X}_1 - \mathbf{X}_0\mathbf{W})}$, where \mathbf{V} is a diagonal matrix incorporating information about the relative weights placed on different predictors, \mathbf{W} is a vector of nonnegative weights that sum to 1, \mathbf{X}_1 is a vector containing pretreatment information about the predictors associated with the treatment unit, and \mathbf{X}_0 is a matrix containing pretreatment information about the predictors for all the control units.

consists of all nine states with no RTC legislation as of the year 2014, as well as states that pass RTC laws at least 10 years after the passage of the treatment state (e.g., in this case, the five states passing RTC laws after 2006, such as Nebraska and Kansas, whose RTC laws went into effect at the beginning of 2007). Since we estimate results for up to 10 years postpassage,⁵¹ this restriction helps us avoid including states with their own permissive concealed carry laws in the synthetically constructed unit (which would mar the control comparison).

After entering the necessary specification information into the *synth* program (e.g., treatment unit, list of control states, explanatory variables, etc.), the algorithm proceeds to construct the synthetic unit from the list of control states specific to Texas and generates values of the dependent variable for the counterfactual for both the pre-treatment and posttreatment periods. The rationale behind this methodology is that a close fit in the prepassage time series of crime between the treatment state and the synthetic control generates greater confidence in the accuracy of the constructed counterfactual. Computing the posttreatment difference between the dependent variables of the treatment state and the synthetic control unit provides the synthetic control estimate of the treatment effect attributable to RTC adoption in that state.

1. Synthetic Control Estimates of Violent Crime in Two States

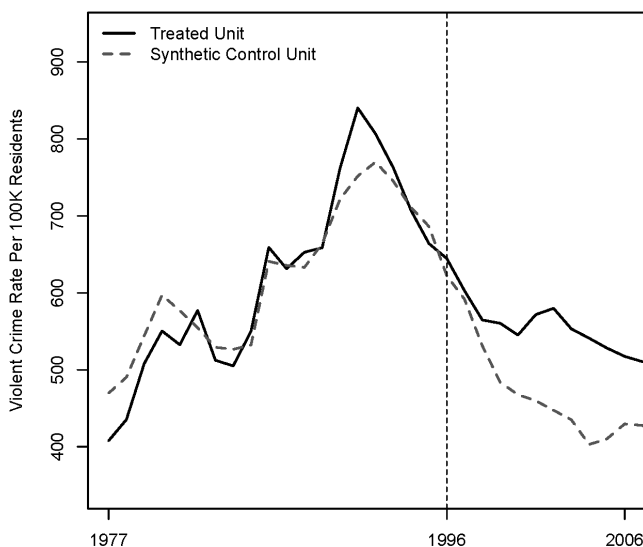
Figure 5 shows the synthetic control graph for violent crime in Texas over the period from 1977 through 2006 (10 years after the adoption of Texas's RTC law). The solid black line shows the actual pattern of violent crime for Texas, and the vertical line indicates when the RTC law went into effect. Implementing the synthetic control protocol identifies three states that generate a good fit for the pattern of crime experienced by Texas in the pre-1996 period. These states are California, which gets a weight of 57.7 percent owing to its similar attributes compared to Texas, Nebraska with a weight of 9.7 percent, and Wisconsin with a weight of 32.6 percent.

One of the advantages of the synthetic control methodology is that one can assess how well the synthetic control (call it "synthetic Texas," which is identified in Figure 5 by the dashed line) matches the pre-RTC-passage pattern of violent crime to see whether the methodology is likely to generate a good fit in the 10 years of postpassage data. Here the fit looks rather good in mimicking the rises and falls in Texas violent crime from 1977–1995. This pattern increases our confidence that synthetic Texas will provide a good prediction of what would have happened in Texas had it not adopted an RTC law.

Looking at Figure 5, we see that while both Texas and synthetic Texas (the weighted average violent crime performance of the three mentioned states) show declining crime rates in the postpassage decade after 1996, the crime drop is

⁵¹Our choice of 10 years is informed by the tradeoffs associated with using a different timeframe. Tables 5 and 6 indicate that the increase in violent crime due to RTC laws is statistically significant at the .01 level for all years after seven years post-adoption.

Figure 5: Texas: Violent crime rate.



Effect of 1996 RTC Law 10 Years After Adoption: 16.9%

NOTE: Passage Year Difference From SC: 3.6% Composition of SC: CA (0.577); NE (0.097); WI (0.326) CVRMSPE: 0.06 (8 of 33 states, where 1 denotes the state with the best pre-passage fit.).

States Never Passing RTC Laws Included in Synthetic Control: CA;

RTC Adopting States Included in Synthetic Control: NE (2007); WI (2012).

substantially greater in synthetic Texas, which had no RTC law over that period, than in actual Texas, which did. As Figure 5 notes, 10 years after adopting its RTC law, violent crime in Texas was 16.9 percent *higher* than we would have expected had it not adopted an RTC law.⁵²

Figure 5 also illustrates perhaps the most important lesson of causal inference: one cannot simply look before and after an event to determine the consequence of the event. Rather, one needs to estimate the difference between what did unfold and the counterfactual of what would have unfolded without the event. The value of the synthetic control methodology is that it provides a highly transparent estimate of that counterfactual, using a tool designed to ensure the validity of the parallel trends assumption that we have already seen is so critical to achieving meaningful causal estimates. Thus, when Lott

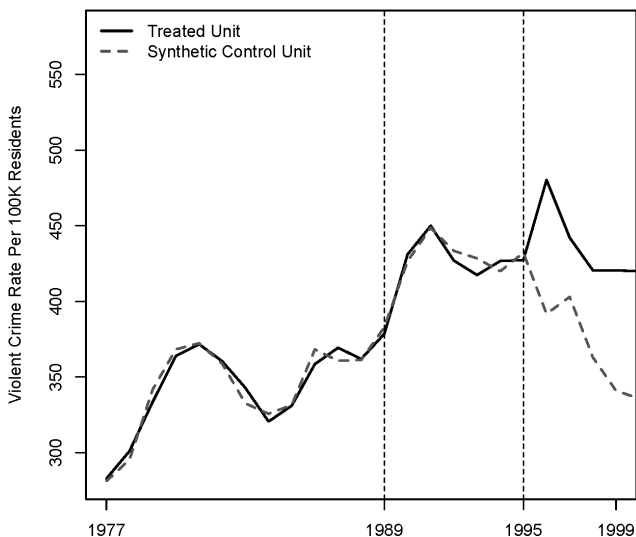
⁵²Texas's violent crime rate 10 years post-adoption exceeds that of "synthetic Texas" by 20.41 percent $= \frac{517.3 - 496.6}{429.6} \times 100\%$. While some researchers would take that value as the estimated effect of RTC, we chose to subtract off the discrepancy in 1996 between the actual violent crime rate and the synthetic control value in that year. This discrepancy is 3.55 percent $= \frac{644.4 - 622.3}{622.3} \times 100\%$ (shown in the line just below the graph of Figure 5). See footnote 58 for further discussion of this calculation. Figure 5 shows a (rounded) estimated violent crime increase in Texas of 16.9 percent. We arrive at this estimate by subtracting the 1996 discrepancy of 3.55 percent from the 20.41 percent 10th-year discrepancy, which generates a TEP of 16.86 percent.

(2010) quotes a Texas District Attorney suggesting that he had reversed his earlier opposition to the state’s RTC law in light of the perceived favorable experience with the law, we see why it can be quite easy to draw the inaccurate causal inference that Texas’s crime decline was facilitated by its RTC law. The public may perceive the falling crime rate post-1996 (the solid black line), but our analysis suggests that Texas would have experienced a more sizable violent crime decline if it had not passed an RTC law (the dotted line). More specifically, Texas experienced a 19.7 percent decrease in its aggregate violent crime rate in the 10 years following its RTC law (between 1996 and 2006), while the state’s synthetic control experienced a larger 31.0 percent decline. This counterfactual would not be apparent to residents of the state or to law enforcement officials, but our results suggest that Texas’s RTC law imposed a large social cost on the state.

The greater transparency of the synthetic control approach is one advantage of this methodology over the panel data models that we considered above. Figure 5 makes clear what Texas is being compared to, and we can reflect on whether this match is plausible and whether anything other than RTC laws changed in these three states during the post-passage decade that might compromise the validity of the synthetic control estimate of the impact of RTC laws.

Figure 6 shows our synthetic control estimate for Pennsylvania, which adopted an RTC law in 1989 that did not extend to Philadelphia until a subsequent law went into

Figure 6: Pennsylvania: Violent crime rate.



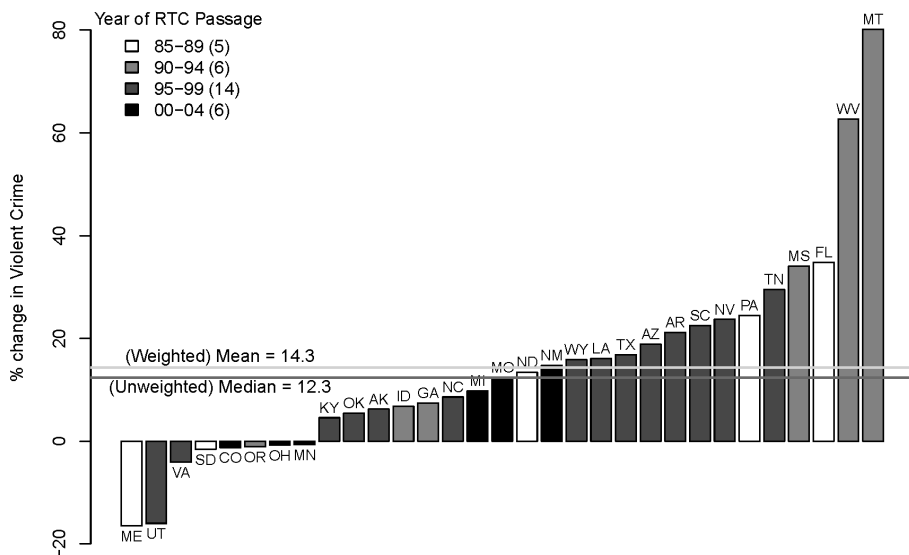
Effect of 1989 RTC Law 10 Years After Adoption: 24.4%

NOTE: Passage Year Difference From SC: -1.1%. Composition of SC: DE (0.078); HI (0.073); MD (0.038); NE (0.016); NJ (0.103); OH (0.27); WI (0.424) CVRMSPE: 0.017 (1 of 33 states, where 1 denotes the state with the best pre-passage fit.).

States Never Passing RTC Laws Included in Synthetic Control: DE; HI; MD; NJ;

RTC Adopting States Included in Synthetic Control: NE (2007); OH (2004); WI (2012).

Figure 7: The effect of RTC laws on violent crime after 10 years, synthetic control estimates for 31 states (1977–2014).



effect on October 11, 1995. In this case, synthetic Pennsylvania is comprised of eight states and the prepassage fit is nearly perfect. Following adoption of the RTC laws, synthetic Pennsylvania shows substantially better crime performance than actual Pennsylvania after the RTC law is extended to Philadelphia in late 1995, as illustrated by the second vertical line at 1996. The synthetic control method estimates that RTC laws in Pennsylvania increased its violent crime rate by 24.4 percent after 10 years.⁵³

2. State-Specific Estimates Across All RTC States

Because we are projecting the violent crime experience of the synthetic control over a 10-year period, there will undoubtedly be a deviation from the “true” counterfactual and our estimated counterfactual. If we were only estimating the impact of a legal change for a single state, we would have an estimate marred by this purely stochastic aspect of changing crime. Since we are estimating an average effect across a large number of states, the

⁵³In Appendix I, we include all 33 graphs showing the path of violent crime for the treatment states and the synthetic controls, along with information about the composition of these synthetic controls, the dates of RTC adoption (if any) for states included in these synthetic controls, and the estimated treatment effect (expressed in terms of the percent change in a particular crime rate) 10 years after adoption (or seven years after adoption for two states that adopted RTC laws in 2007, since our data end in 2014). The figures also document the discrepancy in violent crime in the year of adoption between the actual and synthetic control values.

stochastic variation will be diminished as the overestimates and underestimates will tend to wash out in our mean treatment estimates. Figure 7 shows the synthetic control estimates on violent crime for all 31 states for which we have 10 years of postpassage data. For 23 of the 31 states adopting RTC laws, the increase in violent crime is noteworthy.⁵⁴ Although three states were estimated to have crime reductions greater than the -1.6 percent estimate of South Dakota, if one averages across all 31 states, the (population-weighted) mean treatment effect after 10 years is a 14.3 percent *increase* in violent crime. If one instead uses an (unweighted) median measure of central tendency, RTC laws are seen to *increase* crime by 12.3 percent.

3. Less Effective Prepassage Matches

Section IV.B.1 provided two examples of synthetic controls that matched the crime of the treatment states well in the prepassage period, but this does not always happen. For example, we would have considerably less confidence in the quality of the synthetic control estimates for Maine, whose poor estimate is depicted in Appendix Figure I11. Maine also happens to be the state showing the greatest reduction in violent crime following RTC adoption, as indicated in Figure 7.

For Maine, one sees that the synthetic control and the state violent crime performance diverged long before RTC adoption in 1986, and that, by the date of adoption, Maine's violent crime rate was already 37.9 percent below the synthetic control estimate. The violent crime rate of actual Maine was trending down, while the synthetic control estimate had been much higher and trending up in the immediate pre-adoption period. The difficulty in generating good prepassage matches for states like Maine stems from their unusually low violent crime in the prepassage period.

Appendix Figure D11 reproduces Figure 7 while leaving out the five states for which the quality of prepassage fit is clearly lower than in the remaining 26 states.⁵⁵ This knocks out North Dakota, South Dakota, Maine, Montana, and West Virginia, thereby eliminating three of the five outlier estimates at both ends of the scale, and leaving the mean and median effects of RTC laws relatively unchanged from Figure 7. As Appendix Figure D11 shows, the (weighted) mean increase in crime across the listed 26 RTC-adopting states is 13.7 percent while the (unweighted) median increase is now 11.1 percent. Increases in violent crime of this magnitude are troubling. Consensus estimates of the elasticity of crime with respect to incarceration hover around 0.15 today, which suggests that to offset the increase in crime caused by RTC adoption, the average RTC state would need to approximately double its prison population.

⁵⁴The smallest of these, Kentucky, had an increase of 4.6 percent.

⁵⁵In particular, for these five states, the prepassage CVRMSPE—that is, the RMSPE transformed into a coefficient of variation by dividing by the average prepassage crime rate—was 19 percent or greater. See note 61 for further discussion of this statistic.

V. AGGREGATION ANALYSIS USING SYNTHETIC CONTROLS

A small but growing literature applies synthetic control techniques to the analysis of multiple treatments.⁵⁶ We estimate the percentage difference in violent crime between each treatment (RTC-adopting) state and the corresponding synthetic control in both the year of the treatment and in the 10 years following it. This estimate of the treatment effect percentage (TEP) obviously uses data from fewer posttreatment years for the two treatment states⁵⁷ in which RTC laws took effect less than 10 years before the end of our sample.

We could use each of these 10 percentage differences as our estimated effects of RTC laws on violent crime for the 10 postpassage years, but, as noted above, we make one adjustment to these figures by subtracting from each the percentage difference in violent crime in the adoption year between the treatment and synthetic control states. In other words, if 10 years after adopting an RTC law, the violent crime rate for the state was 440 and the violent crime rate for the synthetic control was 400, one estimate of the effect of the RTC law could be 10 percent ($= \frac{440 - 400}{400}$). Rather than use this estimate, however, we have subtracted from this figure the percentage difference between the synthetic and treatment states in the year of RTC adoption. If, say, the violent crime rate in the treatment state that year was 2 percent higher than the synthetic control value, we would subtract 2 from 10 to obtain an estimated 10th-year effect of RTC laws of 8 percent.⁵⁸ We

⁵⁶The closest paper to the present study is Arindrajit Dube and Ben Zipperer (2013), who introduce their own methodology for aggregating multiple events into a single estimated treatment effect and calculating its significance. Their study centers on the effect of increases in the minimum wage on employment outcomes, and, as we do, the authors estimate the percentage difference between the treatment and the synthetic control in the post-treatment period. While some papers analyze multiple treatments by aggregating the areas affected by these treatments into a single unit, this approach is not well-equipped to deal with a case such as RTC law adoption where treatments affect the majority of panel units and more than two decades separate the dates of the first and last treatment under consideration, as highlighted in Figure 7.

⁵⁷These two states are Kansas and Nebraska, which adopted RTC laws in 2007. See note 4 discussing the states for which we cannot estimate the impact of RTC laws using synthetic controls.

⁵⁸It is unclear *ex ante* whether one should implement this subtraction. The intuitive rationale for our choice of outcome variable was that pretreatment differences between the treatment state and its synthetic control at the time of RTC adoption likely reflected imperfections in the process of generating a synthetic control and should not contribute to our estimated treatment effect if possible. In other words, if the treatment state had a crime rate that was 5 percent greater than that of the synthetic control in both the pretreatment and posttreatment period, it would arguably be misleading to ignore the pretreatment difference and declare that the treatment increased crime rates by 5 percent. On the other hand, subtracting off the initial discrepancy might be adding noise to the subsequent estimates.

We resolve this issue with the following test of our synthetic control protocol: we pretend that each RTC-adopting state actually adopted its RTC law five years before it did. We then generate synthetic control estimates of this phantom law over the next five years of actual pretreatment data. If our synthetic control approach is working perfectly, it should simply replicate the violent crime pattern for the five pretreatment years. Consequently, the estimated “effect” of the phantom law should be close to zero. Indeed, when we follow our subtraction protocol, the synthetic controls match the pretreatment years more closely than when we do not provide this normalization. Specifically, with subtraction the estimated “effect” in the final pretreatment year is a wholly insignificant 3.2 percent; without subtraction, it jumps to a statistically significant 5.3 percent. Consequently,

then look across all the state-specific estimates of the impact of RTC laws on violent crime for each of the 10 individual postpassage years and test whether they are significantly different from zero.⁵⁹

A. RTC Laws Increase Violent Crime

We begin our analysis of the aggregated synthetic control results using predictors derived from the DAW specification. Table 5 shows our results on the full sample examining violent crime.⁶⁰ Our estimates of the normalized average treatment effect percentage (TEP) suggest that states that passed RTC laws experienced more deleterious changes in violent criminal activity than their synthetic controls in the 10 years after adoption. On average, treatment states had aggregate violent crime rates that were almost 7 percent higher than their synthetic controls five years after passage and around 14 percent higher 10 years after passage. Table 5 suggests that the longer the RTC law is in effect (up to the 10th year that we analyze), the greater the cost in terms of increased violent crime.

As we saw in Figures 6 (Pennsylvania) and I11 (Maine), the validity of using the posttreatment difference between crime rates in the treatment state (the particular state adopting an RTC law that we are analyzing) and its corresponding synthetic control as a measure of the effect of the RTC law depends on the strength of the match between these two time series in the pretreatment period. To generate an estimate of pretreatment fit that takes into account differences in pretreatment crime levels, we estimate the coefficient of variation for the root mean squared prediction error (RMSPE), which

normalization is the preferred approach for violent crime. It should also be noted that our actual synthetic control estimates will be expected to perform better than this phantom RTC estimate since we will be able to derive our synthetic controls from five additional years of data, thereby improving our pretreatment fit.

As it turns out, the choice we made to subtract off the initial-year crime discrepancy is a conservative one, in that the estimated crime increases from RTC laws would be *greater* without subtraction. We provide synthetic control estimates for the DAW model without subtraction of the adoption-year percentage difference for violent crime, murder, and property crime in Appendix F. Comparison of these Appendix F estimates with those in the text (Table 5) reveals that our preferred method of subtracting yields more conservative results (i.e., a smaller increase in violent crime due to RTC). In Table 5, we estimate the 10th-year TEP for violent crime as roughly 13.5 to 14.3 percent, while the comparable estimates without subtraction are roughly 17–18 percent, as seen in Appendix Tables F1, F2, and F3. Indeed, without subtraction, every estimated impact would show RTC laws lead to a statistically significant increase in every crime category we consider except non-firearm homicide, as seen in Appendix F.

⁵⁹This test is performed by regressing these differences in a model using only a constant term and examining whether that constant is statistically significant. These regressions are weighted by the population of the treatment state in the posttreatment year under consideration. Robust standard errors corrected for heteroskedasticity are used in this analysis.

⁶⁰We discuss the synthetic control estimates for murder and property crime in Section V.F.

Table 5: The Impact of RTC Laws on the Violent Crime Rate, DAW Covariates, Full Sample, 1977-2014

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Average normalized treatment effect percentage (TEP)	-0.117 (1.076)	2.629* (1.310)	3.631* (1.848)	4.682** (2.068)	6.876*** (2.499)	7.358** (3.135)	10.068*** (2.823)	12.474*** (3.831)	14.021*** (3.605)	14.344*** (2.921)
N	33	33	33	33	33	33	33	31	31	31
Pseudo <i>p</i> value	0.936	0.274	0.220	0.192	0.094	0.106	0.060	0.038	0.032	0.032

Note: Standard errors in parentheses. Column numbers indicate postpassage year under consideration; N = number of states in sample. The synthetic controls method is run using the nested option, and each year's estimate and statistical significance is computed as explained in note 59. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

is the ratio of the synthetic control's pretreatment RMSPE to the pretreatment average level of the outcome variable for the treatment state.⁶¹

To evaluate the sensitivity of the aggregate synthetic control estimate of the crime impact of RTC laws in Table 5, we consider two subsamples of treatment states: states whose coefficients of variation are less than two times the average coefficient of variation for all 33 treatments and states whose coefficients of variation are less than this average. We then rerun our synthetic control protocol using each of these two subsamples to examine whether restricting our estimation of the average treatment effect to states for which a relatively "better" synthetic control could be identified would meaningfully change our findings.

All three samples yield roughly identical conclusions: RTC laws are consistently shown to increase violent crime, with the 10th-year increase ranging from a low of 13.5 (when we remove the six states with above-average values of the CV RMSPE) to a high of 14.3 percent (Table 5).

B. The Placebo Analysis

Our ability to make valid inferences from our synthetic control estimates depends on the accuracy of our standard error estimation. To test the robustness of the standard errors that we present under the first row of Table 5, we incorporate an analysis using placebo treatment effects similar to Ando (2015).⁶² For this analysis, we generate 500 sets of randomly generated RTC dates that are designed to resemble the distribution of actual RTC

⁶¹While the RMSPE is often used to assess this fit, we believe that the use of this measure is not ideal for comparing fit across states, owing to the wide variation that exists in the average pretreatment crime rates among the 33 treatment states that we consider. For example, the pretreatment RMSPE associated with our synthetic control analysis using the DAW predictor variables and aggregate violent crime as the outcome variable is nearly identical for Texas (37.1) and Maine (36.4), but the pretreatment levels of Texas's aggregate violent crime rate are far greater than Maine's. To be more specific, Texas's average violent crime rate prior to the implementation of its RTC law (from 1977 through 1995) was 617 violent crimes per 100,000 residents, while the corresponding figure for Maine was 186 violent crimes per 100,000 residents, less than one-third of Texas's rate. The more discerning CV of the RMSPE is 0.06 for Texas (with a year of adoption discrepancy of only 3.6 percent), while for Maine, the CV is a dramatically higher at 0.196 (with an initial year discrepancy of -37.9 percent). Accordingly, since the percentage imprecision in our synthetic pretreatment match for Maine is so much greater than for Texas, we have greater confidence in our estimates that in the 10th year, Texas's RTC law had increased violent crime by 16.9 percent than we do in an estimate that Maine's law had decreased violent crime by 16.5 percent.

⁶²Ando (2015) examines the impact of constructing nuclear plants on local real per capita taxable income in Japan by generating a synthetic control for every coastal municipality that installed a nuclear plant. Although the average treatment effect measured in our article differs from the one used by Ando, we follow Ando in repeatedly estimating average placebo effects by randomly selecting different areas to serve as placebo treatments. (The sheer number of treatments that we are considering in this analysis prevents us from limiting our placebo treatment analysis to states that never adopt RTC laws, but this simply means that our placebo estimates will likely be biased *against* finding a qualitatively significant effect of RTC laws on crime, since some of our placebo treatments will be capturing the effect of the passage of RTC laws on crime rates.) Our estimated average treatment effect can then be compared to the distribution of average placebo treatment effects. Heersink and Peterson (2016) and Cavallo et al. (2013) also perform a similar randomization procedure to estimate the significance of their estimated average treatment effects, although the randomization procedure in the latter paper differs from ours by restricting the timing of placebo treatments to the exact dates when actual treatments took place.

passage dates that we use in our analysis.⁶³ For each of the 500 sets of randomly generated RTC dates, we then use the synthetic control methodology and the DAW predictors to estimate synthetic controls for each of the 33 states whose randomly generated adoption year is between 1981 and 2010. We use these data to estimate the percentage difference between each placebo treatment and its corresponding synthetic control during both the year of the treatment and each of the 10 posttreatment years (for which we have data) that follow it. Using the methodology described in notes 52 and 58, we then test whether the estimated treatment effect for each of the 10 posttreatment years is statistically significant.

To further assess the statistical significance of our results, we compare each of the 10 coefficient estimates in Table 5 with the distribution of the 500 average placebo treatment effects that use the same crime rate, posttreatment year, and sample as the given estimate. To assist in this comparison process, we report a pseudo p value that is equal to the proportion of our placebo treatment effects whose absolute value is greater than the absolute value of the given estimated treatment effect. This pseudo p value provides another intuitive measure of whether our estimated average treatment effects are qualitatively large compared to the distribution of placebo effects. Our confidence that the treatment effect that we are measuring for RTC laws is real increases if our estimated treatment effect is greater than the vast majority of our estimated average placebo treatment effects. Examining our pseudo p values in Table 5, we see that our violent crime results are always statistically significant in comparison to the distribution of placebo coefficients at the 0.05 level eight years or more past RTC adoption.

C. Synthetic Control Estimates Using LM's Explanatory Variables

In our Section III panel data analysis, we saw that RTC laws were associated with significantly higher rates of violent crime in the DAW model (Table 3), but not in the LM model (Table 4, Panel A). Under the synthetic controls approach, however, we find that the results are the same whether one uses the DAW or LM explanatory variables. This is necessarily true when one uses yearly lags in implementing the synthetic controls – see Kaul et al. (2016) – but it is also true when we use three lags of the dependent variable in our synthetic control protocol, as shown in Table 6. The detrimental effects of RTC laws on violent crime rates are statistically significant at the 0.05 level starting three years after the passage of an RTC law, and appear to increase over time. The treatment effects associated with violent crime in Table 6 range from 9.6 percent in the seventh posttreatment year to 12.8 percent in the 10th posttreatment year. Remarkably, the DAW and LM synthetic control estimates of the impact of RTC laws on violent crime are nearly identical

⁶³More specifically, we randomly choose eight states to never pass RTC laws, six states to pass RTC laws before 1981, 33 states to pass RTC laws between 1981 and 2010, and three states to pass their RTC laws between 2011 and 2014. (Washington, DC is not included in the placebo analysis since it is excluded from our main analysis.) These figures were chosen to mirror the number of states in each of these categories in our actual data set.

Table 6: The Impact of RTC Laws on the Violent Crime Rate, LM covariates, Full Sample, 1977–2014

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Average Normalized TEP	0.309 (1.318)	1.981 (1.646)	4.063* (2.192)	5.211* (2.572)	7.159** (2.887)	6.981** (3.319)	9.644*** (3.016)	11.160*** (3.680)	12.115*** (3.857)	12.794*** (3.200)
N	33	33	33	33	33	33	33	31	31	31

Note: Standard errors in parentheses. Column numbers indicate post-passage year under consideration; N = number of states in sample. The synthetic controls method is run using the non-nested option, and each year's estimate and statistical significance is computed as explained in footnote 59. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

(compare Tables 6 and Appendix Table K1), and this is true even when we limit the sample of states in the manner described above.⁶⁴

D. The Contributions of Donor States to the Synthetic Control Estimates: Evaluating Robustness

One of the key elements of the synthetic control approach is its selection among plausible control states. For each state adopting an RTC law in year X, the approach selects among states that do not have RTC laws through at least ten years after X, including never-adopting states. Appendix Figure D10 lists all the states that are eligible under this criterion to serve as synthetic controls for one or more of the 33 adopting states, and shows how often they are selected. The horizontal length of each bar tells us how much that state contributes to our synthetic control violent crime estimates.⁶⁵ As the figure indicates, Hawaii appears most frequently—contributing to a synthetic control 18 of the 33 times it is eligible and averaging a 15.2 percent contribution—but California, a substantial contributor to multiple large states, edges it out for the largest average contribution (18.1 percent).

Hawaii's relatively large contribution as a donor state in the synthetic control estimates has some advantages but also raises concern that this small state might be unrepresentative of the states for which it is used as a control. For example, note that the largest share of Virginia's synthetic control comes from Hawaii (27.9 percent), with Rhode Island, Kansas, and Nebraska making up the lion's share of the remaining synthetic control. We had already mentioned one problem with the panel data analysis caused by the tendency of lax gun control states to serve as a source for guns that contribute to crime in the non-RTC states, and Virginia has always been a major source of that interstate flow. Since Virginia's guns are not likely to end up in Hawaii, the bias that the treatment infects the control is reduced for that particular match. Nonetheless, one may be concerned that Hawaii might be unduly skewing the estimates of the impact of RTC laws on violent crime.

To address this, as well as the analogous concern for other potentially idiosyncratic control states, we generated 18 additional TEP estimates, with each one generated by dropping a single one of the 18 states that appears as an element of our synthetic control analysis (as identified in Appendix Figure D10). The results of this exercise are presented in Appendix Figure D12, which shows that our estimated increase in violent crime resulting from the adoption of an RTC law is extremely robust: All 18 estimates remain statistically significant at the 0.01 percent level, and

⁶⁴The 10th-year effect in the synthetic control analysis using the LM variables is 12.4 percent when we eliminate the three states with more than twice the average CV of the RMSPE. Knocking out the seven states with above-average values of this CV generates a similar 12.5 percent effect.

⁶⁵In particular, it reflects the portion of each synthetic state it becomes part of, weighted by the treated state's population. For example, Texas's population is 13.6 percent of the total treated states' population. As a result, a state that made up 50 percent of synthetic Texas (but is not a donor for any other treatment state) would have a bar of size 6.8 percent.

the smallest TEP, which comes from dropping Illinois as a control state, is 12.0 percent. Note in particular that dropping Hawaii from the list of potential donor states slightly *increases* the estimate of the increase in violent crime caused by RTC laws. In fact, when we dropped Hawaii completely as a potential control and repeated the previous protocol of dropping one state at a time, the estimated increase in violent crime from RTC never fell below 12 percent (which was the value when New York was dropped as well as Hawaii). Indeed, the synthetic control finding that RTC laws increase violent crime is so robust that even if we drop California, New York, and Hawaii from the pool of potential donor states, RTC laws still increase violent crime by 8.9 percent after 10 years ($p = 0.018$).

E. Does Gun Prevalence Influence the Impact of RTC Laws?

The wide variation in the state-specific synthetic control estimates that was seen in Figures 7 and D11 suggests that there is considerable noise in some of the outlier estimates of a few individual states. For example, it is highly improbable that RTC laws led to a 16.5 percent decrease in violent crime in Maine and an 80.2 percent increase in violent crime in Montana, the two most extreme estimates seen in Figure 7. Since averaging across a substantial number of states will tend to eliminate the noise in the estimates, one should repose much greater confidence in the aggregated estimates than in any individual state estimate. Indeed, the fact that we can average across 33 separate RTC-adopting states is what generates such convincing and robust estimates of the impact of RTC laws on violent crime.

Another way to distill the signal from the noise in the state-specific estimates is to consider whether there is a plausible factor that could explain underlying differences in how RTC adoption influences violent crime. For example, RTC laws might influence crime differently depending on the level of gun prevalence in the state.

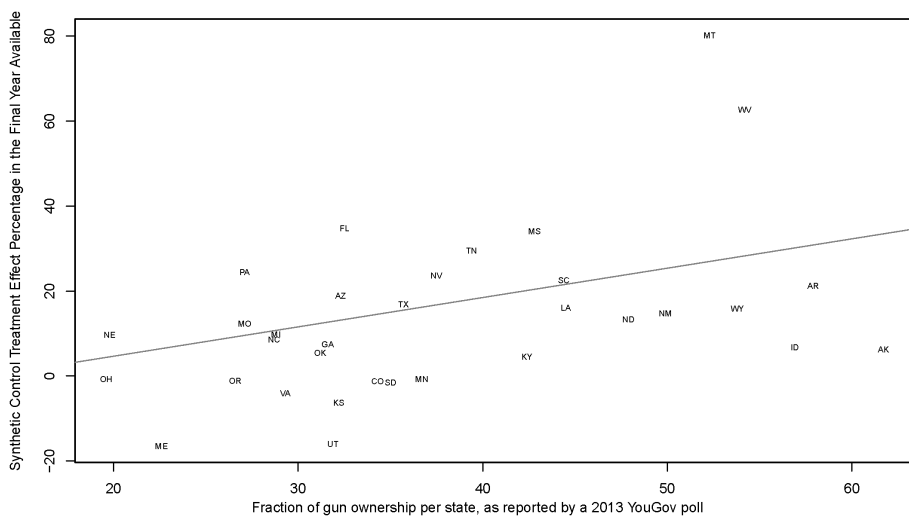
Figure 8 shows the scatter diagram for 33 RTC-adopting states, and relates the estimated impact on violent crime to a measure of gun prevalence in each RTC-adopting state. The last line of the note below the figure provides the regression equation, which shows that gun prevalence is positively related to the estimated increase in crime ($t = 2.39$).⁶⁶

F. The Murder and Property Crime Assessments with Synthetic Controls

The synthetic control estimates of the impact of RTC laws on violent crime uniformly generate statistically significant estimates, and our phantom RTC law synthetic control estimates for the five pretreatment years (described in note 58) give us confidence that the synthetic control approach is working well for our violent crime estimates, as illustrated in Appendix Table L1. Since the estimated increases in violent crime are

⁶⁶The gun prevalence data were collected by the data analytics firm YouGov in a 2013 online survey (Kalesan et al. 2016); 4,486 people were initially surveyed, although only 4,000 results are used in the final data set. YouGov used a proximity matching method to select the survey results for inclusion, matching respondents by race, age, gender, and education to the demographic breakdown of the 2010 American Community Survey.

Figure 8: The impact of gun ownership on the increase in violent crime due to RTC laws (synthetic control estimates, 1977–2014).



NOTE: Treatment effect displayed is for the 10th year after RTC adoption (but 7th post–passage year for Kansas and Nebraska). Treatment Effect = $-9.15 + 0.69 * \text{Gun Prevalence}$. $t = 2.39$; $R^2 = 0.16$. Regression weighted by population in the final TEP year.

statistically significant and consistently observed in both our panel data and synthetic control analyses, these represent our most robust finding.

Just as we saw in the panel data analysis, the synthetic controls provide evidence of increases in the murder and firearm murder categories, but it is weaker and less precise than our violent crime estimates. For example, both Appendix Tables E1 and E2 show estimated crime increases of 8.7 percent (murder) and 15.3 percent (firearm murder), but only the 8.7 figure is statistically significant at the 0.10 level. Interestingly, our phantom law test works well for murder and even suggests statistically significant increases in that crime beginning right at the time of RTC adoption (Appendix Table L3). The firearm murder estimates perform less well in this test, generating an estimated fall in crime of 6.8 percent in the year prior to RTC adoption (Appendix Table L5).

The results from implementing this phantom law approach for property crime are perhaps our less encouraging estimates. While our estimated “effect” in the year prior to adoption would ideally be close to zero in this test, for property crime it is 6.9 percent, with the latter significant at the 0.10 level. (The full results of this test for all the crime categories are shown in Appendix L.) If we accept our normalized estimate for the impact of RTC laws on property crime it would give little reason to reject a null hypothesis of no effect (Appendix Table E8). Because our synthetic control estimates for violent crime are validated by our phantom adoption test and generate uniform and highly

robust results whether dropping selected donor states or states with poor fit, or using either the DAW or LM models, we have greater confidence in and therefore highlight our violent crime estimates. Accordingly, we consign our further discussion of the synthetic control estimates of murder and property crime to Appendix E.

VI. CONCLUSION

The extensive array of panel data and synthetic control estimates of the impact of RTC laws that we present uniformly undermine the “More Guns, Less Crime” hypothesis. There is not even the slightest hint in the data from any econometrically sound regression that RTC laws reduce violent crime. Indeed, the weight of the evidence from the panel data estimates as well as the synthetic control analysis best supports the view that the adoption of RTC laws substantially raises overall violent crime in the 10 years after adoption.

In our initial panel data analysis, our preferred DAW specification predicted that RTC laws have led to statistically significant and substantial increases in violent crime. We also presented both panel data and synthetic control estimates that RTC laws substantially increase the percentage of robberies committed with a firearm, while having no restraining effect on the overall number of robberies. Moreover, to the extent the massive theft of guns from carrying guns outside the home generates crime spillovers to non-RTC states, our estimated increases in violent crime are downward biased.

We then supplemented our panel data results using our synthetic control methodology, and the finding from our panel data analysis was strongly buttressed. Whether we used the DAW or LM specifications, states that passed RTC laws experienced 13–15 percent *higher* aggregate violent crime rates than their synthetic controls after 10 years (results that were significant at either the 0.05 or 0.01 level after five years).

The synthetic control effects that we measure represent meaningful increases in violent crime rates following the adoption of RTC laws, and this conclusion remained unchanged after restricting the set of states considered based on model fit and after considering a large number of robustness checks. The consistency across different specifications and methodologies of the finding that RTC elevates violent crime enables far stronger conclusions than were possible over a decade ago when the NRC Report was limited to analyzing data only through 2000 with the single tool of panel data evaluation.

The best available evidence using different statistical approaches—panel data regression and synthetic control—with varying strengths and shortcomings and with different model specifications all suggest that the net effect of state adoption of RTC laws is a substantial increase in violent crime.

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EXHIBIT 3



RTC Laws Increase Violent Crime: Moody and Marvell Have Missed the Target

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[LINK TO ABSTRACT](#)

Donohue, Aneja, and Weber (2018), released as National Bureau of Economic Research working paper 23510, uses two distinct methodologies to provide the latest and most comprehensive evaluation of the impact on crime of state laws that confer on citizens a right to carry concealed weapons—so-called right-to-carry or RTC laws. Its most robust finding is that RTC laws *increased* violent crime: our preferred panel data estimate indicates a 9 percent increase, while our synthetic control analysis indicates that violent crime rose by about 14 percent in the first decade after RTC adoption.

In a comment on the Donohue, Aneja, and Weber (hereafter DAW) paper, Carlisle Moody and Thomas Marvell (hereafter MM) concede that the uniform approach of using population weights in panel data estimates of crime shows a strongly statistically significant increase of RTC laws on crime in the DAW model (MM 2019, 88). They make an unconvincing argument that the uniform practice should now be rejected and then proceed to show that simplistic panel data models not weighted by population (and using badly miscoded data) would diminish the strength of the finding that RTC laws increase violent crime (*ibid.*, 85–88). We show that both of the proffered MM models violate the basic ‘parallel trends’ requirement of a valid panel data analysis, so their resulting estimates must be rejected. But even with these serious flaws, a more nuanced implementation and

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evaluation of the MM models with attention to the requirements of panel data can illustrate and buttress the basic finding of the DAW panel data analysis that RTC laws *increase* violent crime.

MM (2019, 89–94) then present their own synthetic control analysis, which purports to establish that 14 states show statistically significant increases in violent crime while 12 states show statistically significant decreases. We have many criticisms of their implementation of the synthetic control analysis, from using inappropriate states as potential controls to failing to account for major pre-treatment differences. These problems cause MM to generate many severely inaccurate predictions, particularly for small states. Nonetheless, a simple aggregation of MM’s overall synthetic controls results—whether weighted by state population or the inverse of the pre-treatment error fit—reveals a strong pattern of increasing violent crime in the decade following RTC adoption.

We discuss these points in turn and then summarize in the final section.

DAW’s population-weighted model is superior to MM’s models, and it provides clear evidence that RTC laws increase crime

Weighting by population is conceptually superior

The uniform practice in the literature on estimating the impact of RTC laws on crime from the early work of John Lott through the DAW paper has been to present population-weighted panel data estimates. Every regression run by the authors of the National Research Council (2005) report examining RTC laws was weighted by population. In fact, this is the standard practice in virtually all panel data studies looking at state or county crime data,⁴ including in prior work by MM on RTC laws.⁵ In their current paper, however, they argue that the standard practice should now be rejected, and they would repose confidence in regressions that are not designed to reflect the relative population of each state.

MM acknowledge the reason that all researchers have used population-weighted regressions:

4. For just two very recent examples, see Chalfin and McCrary 2018; Anderson, Sabia, and Tekin 2018.

5. See Moody and Marvell 2018; 2008; Moody, Marvell, Zimmerman, and Alemante 2014; Kovandzic, Marvell, and Vieraitis 2005; Moody 2001.

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[I]f the research goal is to estimate the overall national impact of a policy change, ... then weighting can be justified by arguing that the impact of laws in large states should be emphasized simply because they affect more people. (MM 2019, 85)

Put simply, we are trying to estimate the impact that RTC laws have had on Americans, and this can only be identified by a population-weighted regression. Following the unweighted approach that MM have suddenly decided to champion would imply that the impact of RTC laws on 600,000 individuals in Wyoming is considered to be equally important as the impact on 28 million Texans. To illustrate the importance of weighting by population, consider the MM synthetic control estimates of the impact on violent crime of the RTC laws in these two states. Using their non-normalized synthetic control approach, MM would predict that the Texas RTC law *increased* violent crime by 19.5 percent after ten years but that the Wyoming law had generated a 36 percent *decrease* in violent crime over the decade following adoption (although they never show these estimates in their paper). While we discuss below why we think MM's Wyoming estimate is so flawed, the decision to equally weight Texas and Wyoming, as MM would have us do, generates a prediction that the combined RTC laws *reduced* crime by 8.25 percent. A population-weighted average would show the total effect on the residents of these states to be an 18.3 percent *increase* in violent crime.⁶ In this example, the 18.3 percent increase would reflect the effect of RTC laws on the average American who experienced this legal adoption, and a population-weighted analysis alone would generate this estimate. MM's approach would badly mischaracterize the impact of RTC laws, heralding a significant decline in violent crime when in fact the two RTC laws led to a combined large increase in violent crime.

Having conceded the key reason for population weighting in the panel data regressions, MM (2019, 85–86) then mention a second possible advantage of population weighting: it may serve to address the problem of heteroskedasticity. This is not the primary rationale, but it is often—although not always—a secondary benefit of weighting by population. Since MM conclude that the White test indicates the presence of heteroskedasticity in the DAW population-weighted regressions, MM present estimates using a non-weighted regression approach (their OLS results) and a non-population-weighted approach that seeks to directly

6. MM's wildly inaccurate Wyoming estimate stems from their failure to normalize their synthetic control estimate, which leads them to attribute pre-treatment differences between the fit of the synthetic control and the treatment state to the effect of the treatment. Our DAW synthetic control estimates for the impact of RTC laws on violent crime showed a 16.9 percent increase for Texas and a 15.9 percent increase for Wyoming after ten years. The comparable *normalized* MM synthetic control estimates for these two states are a 13.4 percent increase for Texas and a 9.1 percent increase for Wyoming.

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control for heteroskedasticity (Feasible Generalized Least Squares, or FGLS). Neither of these approaches can succeed in our primary mission, which is to estimate the experience of the average American exposed to RTC laws. But in addition to the conceptual flaw in failing to weight by population, both of the MM suggested alternatives have further problems, including the second problem that they both fail the very test for homoskedasticity that MM advocate using.⁷

The importance of investigating the parallel trends assumption

While that second problem underscores that the MM regressions are still marred by heteroskedasticity (or some specification error), a third problem with the simplistic MM models results from MM's failure to attend to the parallel trends assumption, which is critical to generating valid panel data estimates.

This third problem with MM's two new panel data regressions can be highlighted by comparing them to the results of the DAW population-weighted violent crime regression. The DAW paper provides the year-by-year effect on violent crime following RTC adoption from that regression (2018, 25), which we reproduce here as Figure 1 below. This figure illustrates the critical feature of a valid panel data model that the estimated values on the states that end up adopting RTC laws is virtually zero in the years prior to adoption. Not only are the deviations from zero small, but crucially there is virtually no slope to these pre-adoption values in the years prior to RTC passage. This is important because a panel data estimate will only reveal the causal effect of the RTC law if we can assume that the trends in crime between our two sets of states (adopters and non-adopters) would evolve similarly in the absence of the law.

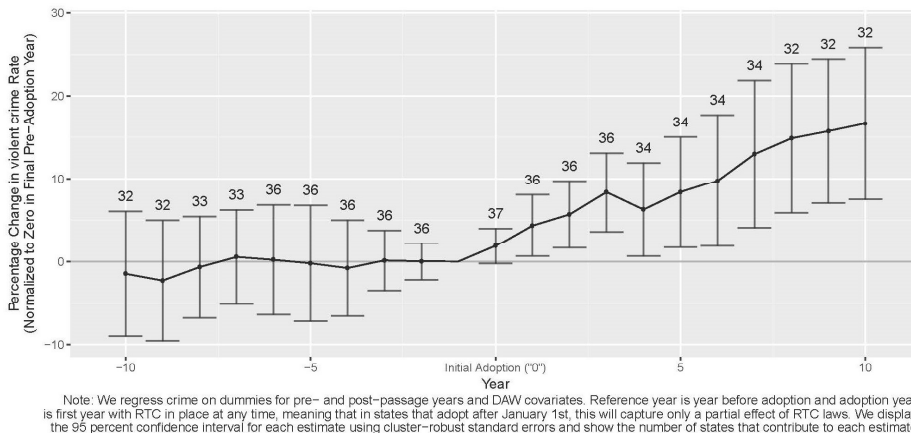
Three lessons emerge from the Figure 1 DAW violent crime regression. First, we see an almost perfect pre-treatment pattern confirming the critical parallel trends assumption for a panel data regression. Controlling for an array of factors (the DAW explanatory variables), violent crime is flat prior to RTC adoption. Second, Figure 1 also reveals that there is a change in the previously stable relationship of crime in the RTC and non-RTC states, and that this change begins exactly in the year of adoption of the RTC laws. If RTC laws had no impact on violent crime, one would expect that flat pattern seen in the years before adoption would continue thereafter. If some factor other than RTC laws (and the array of explanatory variables controlled for in the DAW model) led to worse violent crime performance in RTC states, you would see an elevation in the violent crime estimates, but there

7. This is true for both the MM unweighted OLS regression and for their FGLS regression, both of which badly fail the White test for homoskedasticity with p-values < 0.00000001.

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is no reason to think it would occur in exactly the year that the RTC law goes into effect. Figure 1 makes clear that a sharp secular increase in violent crime commences at the time of RTC adoption, again buttressing a causal interpretation of these results. Third, this increase in violent crime is statistically significant beginning in the first year after RTC adoption and every year thereafter.

Figure 1. The impact of RTC laws on violent crime, DAW model, 1979–2014 (population-weighted)



Evaluating MM’s simple panel models

We can now compare the two alternative models—OLS and FGLS—that MM offer in place of the DAW violent crime estimates reflected in Figure 1. We must first discard all of the MM estimates because of serious coding errors they made in their panel data analysis. Specifically, the MM panel data analysis miscodes both North Dakota and South Dakota as having never adopted an RTC law during the 1977–2014 data period they analyze, even though North Dakota and South Dakota both adopted RTC laws in 1985. The error is perplexing because, in their subsequent synthetic control analysis, MM generate estimates for states adopting RTC laws, including both North and South Dakota, based on that actual year of adoption.⁸ MM also code the date of adoption for Virginia differently in their two analyses. They give Virginia a starting date of 1996 in their synthetic control

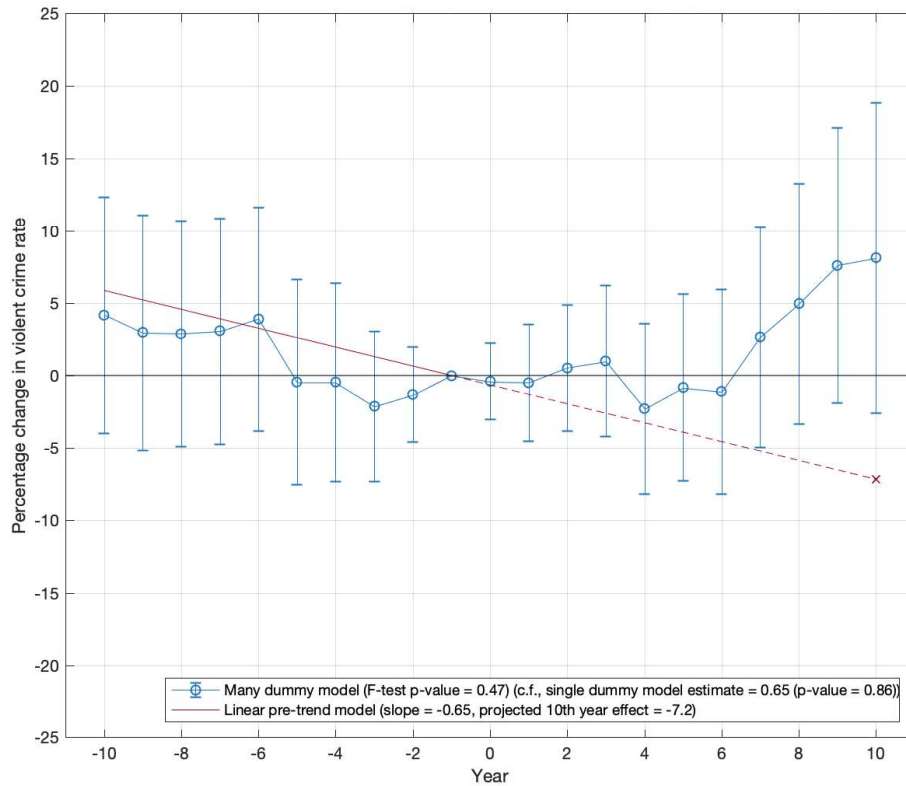
8. MM also have a less precise coding of their RTC law than we use in our DAW paper: they simply use a zero-one dummy that becomes one the first full year the RTC is in effect, while we use an RTC dummy that takes the value of the fraction of the year an RTC law was in effect during the year it was adopted. MM also exclude DC from their panel analysis, while we only exclude DC from our synthetic control analysis.

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analysis, which is consistent with their protocol of turning on their RTC indicator in the year after adoption. In their panel data analysis, however, MM use a Virginia date of 1995, which is doubly wrong in being both a violation of their own protocol and inconsistent with their treatment of Virginia in their synthetic control analysis.

Figure 2 shows violent crime estimates using the preferable DAW data but following MM’s “OLS” approach, which does not weight by population. Three lessons emerge from this analysis. First, Figure 2 reveals a substantial violation of the critical parallel trends assumption: the red line illustrates the sharply sloping downward linear trend in crime for RTC states *prior to RTC adoption*.

Figure 2. The impact of RTC laws on violent crime, DAW model, 1979–2014 (not weighted by population)



Second, the dashed continuation of this line shows the predicted path of violent crime in RTC states had their pre-RTC-adoption trend continued, and by assumption of panel data analysis, the dashed line of Figure 2 suggests that crime would have fallen (relative to non-adopting states) by 7.2 percent after ten years without RTC adoption. Instead we see that the observed post-adoption crime path

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is always above this predicted downward trend, suggesting RTC laws *increased* crime relative to trend.

Third, by the sixth year after adoption and beyond, the estimated increase in violent crime is always statistically significantly above this trend (at the .05 level). But instead of providing this more nuanced analysis, MM simply look at one number for the OLS violent crime estimate: they run a single dummy model for this unweighted regression, which generates the small positive estimate of 0.65 (as shown in the legend to Figure 2). But by failing to realize that such a simple model is marred by the violation of the parallel trends assumption, they merely present an inaccurate and misleading estimate of the impact of RTC laws on violent crime. In other words, MM's violent crime unweighted OLS estimate (MM 2019, 88, Table 1, row 1, column 5) is inaccurate and misleading.⁹

MM also include an FGLS model designed to address the problem of heteroskedasticity (although we have already noted this model's extreme failure of the White test). Figure 3 shows the DAW violent crime year-by-year estimates using this FGLS approach. What are the lessons from this MM-suggested model? First, unlike in the DAW model in Figure 1 where all the pre-treatment values are close to zero and flat in the years prior to RTC adoption, Figure 3 reveals both greater variability in those values and another departure from the ideal parallel trends as captured again in the downward-sloping red line in the period *prior to RTC adoption*. Indeed, this FGLS model fails the most basic test of parallel trends since its pre-trend dummy values are not jointly zero.¹⁰

Second, the dashed continuation of this line shows the predicted path of violent crime in RTC states had their pre-RTC-adoption trend continued, and it suggests that crime would have fallen (relative to non-adopting states) by 1.2 percent after ten years without RTC adoption. As in Figure 2, we see that the observed post-adoption crime path is always above this predicted downward trend, again suggesting RTC laws *increased* violent crime relative to trend, and that this

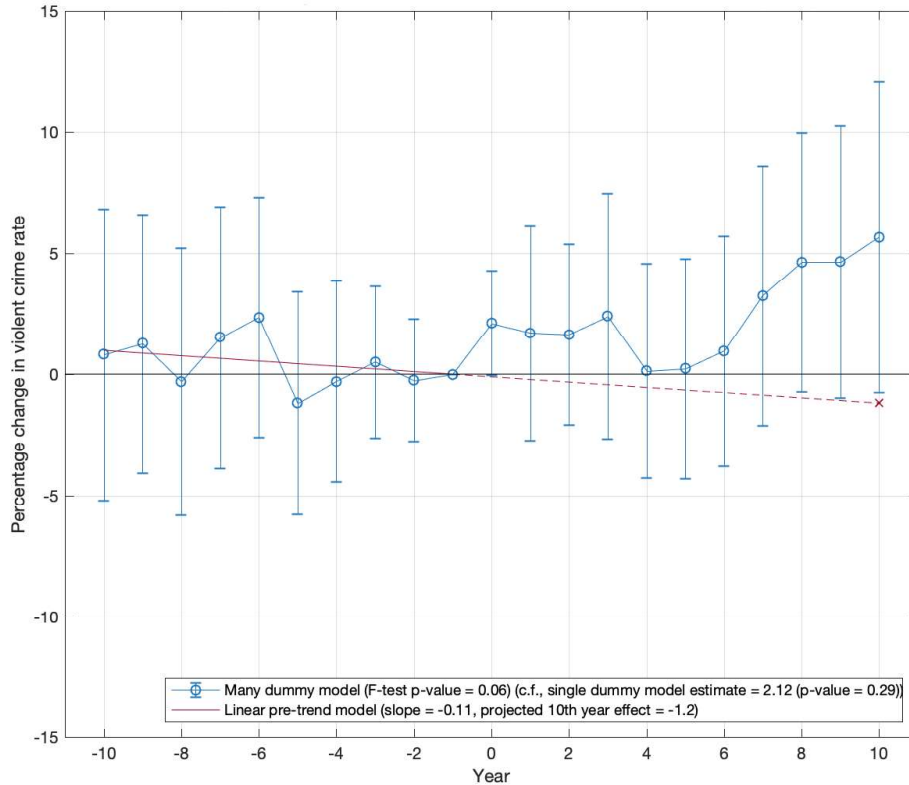
9. MM also present an additional row of "spline" estimates in their Table 1, which is a practice that also dates back to the initial Lott and Mustard (1997) paper. Since the RAND Corporation (2018) study on gun violence research has now argued that "spline" results should not be relied upon, we ignore that component of the MM paper (and have also dropped this model in our own forthcoming work). The RAND analysis of gun research identifies "the use of spline and hybrid effect codings that do not reveal coherent causal effect estimates" as a limitation of earlier studies (2018, xxvii).

10. The most basic statistical test of the assumption of parallel trends uses an F-test of the null hypothesis that the pre-period dummies are jointly equal to zero. Applying this test in Figure 3 generates a p-value of .057, which is too low to support the parallel trends assumption. For this very permissive initial test, one would typically like this p-value to be greater than .50 and certainly no lower than .20, so the Figure 3 FGLS model fails this test badly in a way that obscures any increase in violent crime resulting from RTC adoption. For comparison, the p-value on the same F-test for our far superior Figure 1 DAW violent crime population-weighted regression is .87.

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reversal in the path of violent crime occurred in the year of RTC adoption.

Figure 3. The impact of RTC laws on violent crime, DAW model, 1979–2014 (FGLS)



Third, Figure 3 shows that after the seventh year following RTC adoption, the estimated increase in violent crime is always statistically significantly (at the .05 level) above the dashed projected downward trend. Again, if one were to run the single dummy model for this FGLS regression and ignore the violation of parallel trends as MM do, one would not be presenting valid results. Accordingly, the small positive estimate of 2.12 (as shown in the legend to Figure 3) that emanates from this flawed model again yields an inaccurate and misleading picture of the true path of increased violent crime after RTC adoption. In other words, the MM violent crime regressions (2019, 88, Table 1, row 1, columns 5–6)—other than the population-weighted regression which shows a statistically significant increase in violent crime—are inaccurate and misleading. But note that both the Figure 2 and Figure 3 models that are merely more informative versions of the overly simplistic OLS and FGLS that MM present (using their badly miscoded data) still lead us to a

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very clear conclusion: regardless of the flaws or limitations of the two models that MM present, their more accurate and revealing versions in Figures 2 and 3 can still detect that RTC states experience statistically significant increases in violent crime relative to pre-existing trends within a decade of adoption.

In other words, MM would reject the DAW panel data estimates that RTC laws increase violent crime by roughly 9 percent by instead offering regressions with key miscodings of RTC states that are conceptually inferior because they don't address the primary question of interest (which is the impact of RTC laws on Americans), empirically unsophisticated by virtue of their failure to address the parallel trends assumption, and offer no benefit in addressing the problem of heteroskedasticity.

MM's discussion of heteroskedasticity is largely a distraction from a more important issue: that the difference in results between the population-weighted and unweighted regressions is likely signaling a specification issue. This finding provides an additional reason to turn to the synthetic control analysis, which can give insight into this concern and also provide potentially superior estimates, at least for those states for which good pre-treatment matches can be found. But before turning to the synthetic control estimates, it is important to highlight once again that the DAW violent crime panel data model dominates the MM models both conceptually and econometrically for the reasons set out above.

Evaluating MM's synthetic control analysis, which despite its flaws is shown to reveal that RTC laws increase violent crime

The DAW synthetic control analysis aggregated across all RTC-adopting states generates a year-by-year prediction of the impact of RTC laws on violent crime over the ten years following adoption (2018, 36), shown here in Table 1.

TABLE 1. The impact of RTC laws on violent crime rate, DAW covariates, 1977–2014

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Average normalized TEP	-0.117	2.629 [*]	3.631 [*]	4.682 ^{**}	6.876 ^{***}	7.358 ^{**}	10.068 ^{***}	12.474 ^{***}	14.021 ^{***}	14.344 ^{***}
	(1.076)	(1.310)	(1.848)	(2.068)	(2.499)	(3.135)	(2.823)	(3.831)	(3.605)	(2.921)
N	33	33	33	33	33	33	33	31	31	31
Pseudo p-value	0.936	0.274	0.220	0.192	0.094	0.106	0.060	0.038	0.032	0.032
Notes: Standard errors in parentheses. Column numbers indicate post-passage year under consideration; N = number of states in sample. Dependent variable is the difference between the percentage difference in the violent crime rate in treatment and synthetic control states at given post-treatment interval and at time of the treatment. See DAW (2018, 37–38) regarding how the pseudo p-value is estimated. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.										

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The synthetic control analysis of Table 1 shows that after RTC laws have been in effect for a year, violent crime starts steadily rising (relative to the synthetic control state). After ten years, the DAW synthetic controls analysis estimates that violent crime is about 14.3 percent higher than it would be in the absence of the RTC law. Note that even though Figure 1 (panel data) and Table 1 (synthetic control analysis) are derived from entirely different methodologies, they both estimate that RTC laws increasingly elevate violent crime in the ten years after adoption, which mutually reinforces this conclusion.

Moreover, DAW (2018) showed that the synthetic control result was extremely robust. Indeed, one would generate very similar estimates whether one used the control variables of DAW (those used to derive the estimates shown in Table 1) or those of other papers examining the impact of RTC laws, such as those by Lott and David Mustard (1997) and the Brennan Center (Roeder et al. 2015), or an earlier Moody and Marvell paper (2008). Similarly, one could drop any single control state from the analysis or even completely drop New York and California from the set of potential controls and the results remained strong: RTC laws consistently led to statistically significant *increases* in violent crime after a decade.

DAW (2018) also showed that the result that RTC laws increase violent crime was not sensitive to whether one normalized the synthetic control estimates to be zero at the time of adoption or simply allowed the estimates to emerge from the matching protocol without adjustment. Similarly, the result was robust to efforts to trim off treatment states for which the synthetic control did not well match the target state in the period prior to RTC adoption. DAW also showed the violent crime results remained strong whether one used any of four different approaches designed to improve the fit of the synthetic control by including pre-treatment values of violent crime in the matching protocol or whether one included none of these values.

Since our finding was so strong and robust, we were surprised that Moody and Marvell (2019) offered their own synthetic control analysis that appeared to question the DAW results. Unfortunately, MM's analysis has gone astray, and the short answer is that they have not undermined the synthetic control finding that RTC laws *increase* violent crime in the first decade following adoption.

MM's flaws in implementing their synthetic control analysis

The first step in a successful synthetic control analysis is to denote a set of possible states—called donor states—from which the synthetic control can be constructed. MM got off on the wrong foot by making a mess of that process. In total, we found 57 erroneous donor pool decisions by MM. Sometimes a state

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that should not be in the donor pool was included; other times, states that should have been included were left out. For example, in their synthetic control analysis, MM erroneously treat Alabama as not becoming an RTC state until 2014 while the dominant coding that we employ treats Alabama as an RTC state as of 1975 (which MM also did in their panel data analysis).¹¹ Accordingly, as an RTC state, Alabama cannot serve as a control, yet MM treat it as a potential donor state for 26 out of the 33 RTC states they analyze (and a component of the synthetic control in 14 of those 26 RTC adopters). Seventeen states have some other difference between the donor pool used by Moody and Marvell (2019) and the appropriate states used by DAW (2018). Out of 33 states in the analysis, MM used only five donor pools identical to the correct pools used by DAW.¹²

While the various problems in the MM synthetic control analysis are not worth extended discussion, we just want to highlight how their abbreviated presentation omits any discussion of some of the major pitfalls in their approach. One obvious problem can be seen by examining their own synthetic control estimate of the impact of RTC laws on violent crime in Idaho. MM indicate that Idaho had a violent crime rate of 290 per 100,000 during the first full year of having a RTC law in 1991. Unfortunately, their poorly fit synthetic control had an estimated value of 500 per 100,000 that year. For the next two years, that rather wide disparity between the actual and MM synthetic control estimates of violent crime remained roughly stable, suggesting there had been little impact on crime in those two years, yet under MM's assumptions these were years of more than 40 percent crime drops engineered by the adoption of RTC laws! In other words, MM attributed the massive discrepancy between violent crime in synthetic Idaho and actual Idaho *before* Idaho's RTC law was adopted—resulting from their poor fit—as a crime-reducing benefit of the RTC law.

Over the ten-year period following RTC adoption, the violent crime drop

11. While there is some ambiguity in the appropriate date that Alabama should be coded as having an RTC law, we believe that MM were correct in their treatment of Alabama in their panel data analysis but wrong in using a 2014 RTC date for the state in their synthetic control analysis. The Rand Corporation's Gun Policy in America initiative "developed a longitudinal data set of state firearm laws" that codes the start of Alabama's RTC law as occurring in 1975, as we do (see <https://www.rand.org/pubs/tools/TL283.html> for the downloadable database). This is also consistent with the codings used by the National Rifle Association (NRA), John Lott, and the NRC *Firearms and Violence* report. Indeed, if one looks at Lott's estimated percentage of citizens with concealed carry permits, Alabama ranked first among all the states for which he had data. Lott lists the Alabama percentage as greater than 8 percent for 2007—seven years before the date that MM use for Alabama in their synthetic control analysis (Lott 2010, 238). Moreover, the 2014 date that MM use would imply that Alabama was one of the last states in the union to adopt a RTC law, which would not be consistent with the gun politics of the region nor the estimated percentage of permit holders in the state seven years prior to 2014. The NRA clearly would have successfully pushed for an RTC law in Alabama decades ago if Alabama was thought not to have one.

12. DAW (2018, 60, Table A1) provides the complete list of dates for RTC adoption.

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in MM's synthetic Idaho was estimated to be over 35 percent (from 501 to 324), which was substantially better than the far smaller 16 percent drop in actual Idaho (from 290 to 243). Yet MM treat this as evidence of statistically significant and substantial crime drops caused by Idaho's RTC law. Note that the DAW synthetic controls analysis was superior because it produced a much better fit (the DAW initial year synthetic Idaho estimate was 344, versus the MM estimate of 501!), but also because DAW did not treat that pre-existing difference as evidence that the RTC law immediately caused a major drop in crime.¹³ By doing so, MM were able to mask the fact that their own analysis frequently showed that the synthetic control performed much better (with either larger crime drops or smaller crime increases) than the comparable RTC-adopting state over the ten years following adoption.¹⁴

Aggregating MM's synthetic control estimates reveals that RTC laws increase violent crime

This unpromising beginning ends in an array of synthetic control estimates that on the whole are considerably less promising than those contained in the DAW synthetic control analysis. Essentially, MM got some very bad fits on small states and then used those poor fits to argue that there is no support for the DAW position because 14 states adopting RTC laws experienced statistically significant increases in crime and 12 experienced decreases.¹⁵ (Note that our more accurate synthetic control analysis would show a 15-to-8 advantage for RTC laws causing statistically significant *increases* in crime, which grows to 16-to-4 if one limits the

13. One can see this same problem illustrated in MM's synthetic control graph of the murder rate in Texas (MM 2019, 92, Figure 1). MM's poorly fitting synthetic Texas has a substantially higher murder rate than actual Texas at the time of adoption of the Texas RTC law. Their graph highlights that this occurred because Texas enjoyed a substantial drop in murder relative to the synthetic control—*prior to the adoption of the RTC law!* The MM calculus treats that ill-fitting differential as a benefit of the law, even though if one examined how crime changed in both Texas and synthetic Texas in the aftermath of RTC adoption, no such murder-reduction benefit would be observed.

14. Since we were trying to show whether the panel data finding that RTC laws increased crime was supported by a synthetic control analysis, it was important to use the same 1979–2014 time period for both approaches, which we did. Extending the data set further backwards creates data problems for variables such as poverty and unemployment, which were either not available or not consistently gathered prior to 1979. Disregarding these concerns, MM started their panel data analysis in 1977, and, without explanation, used a different time period (extending back to 1970) for their synthetic control analysis.

15. MM show that, for their statistically significant results, the majority of states experienced an increase in violent crime using the preferred “nested approach” but then go on to present inferior “default” results perhaps because the inferior estimates weakened their finding of a 14-to-12 state dominance for RTC laws increasing violent crime. This is not good practice, and the “default” estimates, which are only appropriate when “nested” results cannot be computed, should be ignored in the MM paper. See the documentation for the Stata synth program, which states that the nested option offers “better performance” than the default option (Abadie, Diamond, and Hainmueller 2014).

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analysis to six to ten years after adoption, reflecting the consistent pattern that the harm of RTC laws rises over the decade following adoption.) Even though the errors in implementation invalidate the MM synthetic control analysis, if MM had simply computed how much violent crime was estimated to have changed in aggregate for the 33 RTC-adopting states for each of the ten years using their own estimates, they would have generated the estimated impacts of RTC laws on violent crime shown in Table 2.

TABLE 2. The impact of RTC laws on the violent crime rate, MM synthetic control methodology and data, 1970–2016

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Average non-normalized TEP	7.21*	7.61*	6.64	8.06	9.81*	10.97**	11.01**	12.55**	14.86**	16.26***
	(3.82)	(4.05)	(4.21)	(4.72)	(4.78)	(4.76)	(4.79)	(5.41)	(5.05)	(4.80)
N	33	33	33	33	33	33	33	33	33	31
P-value	0.07	0.07	0.13	0.10	0.05	0.03	0.03	0.03	0.01	0.00
Notes: Standard errors in parentheses. Column numbers indicate post-passage year under consideration; N = number of states in sample. Dependent variable is the percentage difference in the violent crime rate in treatment and synthetic control states at given post-treatment interval. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.										

Table 2 presents the aggregate, population-weighted impact of RTC laws on violent crime using MM's own data and synthetic control methodology (which does not normalize the estimates to equate the actual and synthetic control crime rates at the time of RTC adoption). In other words, Table 2 just takes MM's actual individual state estimates—which they fail to show—and aggregates them. The finding is clear: RTC laws consistently generated a statistically significant increase in violent crime, rising from a 7.2 percent increase in the first year to 16.3 percent in the tenth year. Note that this is even a larger violent crime increase than that predicted in the DAW synthetic control table reproduced in Table 1 above. Remarkably, MM have completely disguised the key finding of their own synthetic control analysis, which is that, in aggregate, RTC laws are estimated to have substantially increased violent crime.¹⁶

16. The MM (2019) synthetic control analysis goes astray so badly because their non-normalized violent crime estimates tend to be large and positive for big states (for example, four of the five highest population states have positive estimates and three of those four are bigger than 15 percent by the fifth year after RTC adoption) and large and negative for small states (four of the five lowest population states have negative estimates by the fifth year, ranging from -29 percent for Wyoming to -78 percent for North Dakota). Not surprisingly, the unrealistically large negative results tend to be found in the states with the worst pre-treatment fits between synthetic control and treatment states. The DAW (2018) paper documents the ratio of the root mean-squared prediction error (RMSPE) to the mean violent crime rate as a measure of goodness of pre-treatment fit and indicated particular concern when this value rose above 19 percent. To highlight how the MM synthetic control model was doing a particularly bad job for generating plausible controls for small states, note that the error ratio averaged a whopping 48.3 percent for MM's estimates for

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We are quite confident that the DAW (2018) paper has the best available synthetic control estimates of the impact of RTC laws on crime because our synthetic control analysis is done with greater care, with more accurate coding of RTC law adoption dates, and with a far more probing array of robustness checks than the MM analysis.

Conclusion: The best evidence shows that RTC laws increase violent crime

We have shown that the DAW population-weighted panel data estimates shown in Figure 1 satisfy the parallel-trends assumption of a valid panel data analysis, while neither of the alternative models advanced by MM do. This is on top of the serious miscoding problems of the MM panel data analysis. Nonetheless, a proper interpretation of the two MM models (shown in Figures 2 and 3) can reveal that RTC laws alter the path of violent crime starting at the date of adoption and generate statistically significant deviations from prior trends within a decade of passage.

Of course, the fact that our Figure 1 is the best panel data model does not mean it is perfect, and we take the MM critique as providing another reason to be interested in the results of the synthetic control approach to gain insight into the difficult problem of specification that exists in every panel data analysis. While we find the MM synthetic control approach to be too flawed and primitive to rival the more accurate, thorough, and sound analysis in the DAW paper, it is encouraging to see that their analysis conducted over a longer time frame (1970–2016, while ours extended from 1977–2014) and using a non-normalized set of estimates (in contrast to our normalized estimates) still found that a majority of states experienced statistically significant increases in violent crime from RTC adoption. It is likewise encouraging that the aggregated impact across all states mimicked our own analysis in finding strongly increasing violent crime over the decade following RTC adoption (compare our estimates, shown in Table 1, with those aggregated from the MM results, shown in Table 2).

In summary, there is consistent evidence that RTC laws elevate violent crime in the decade after adoption whether one looks at DAW's panel data estimates (Figure 1) or synthetic controls estimates (Table 1) or the properly interpreted

the nine smallest states and only 8.5 percent for the nine largest states. Accordingly, the clear pattern that RTC laws increase violent crime in the ten-year period following adoption emerges whether one weights the actual MM state estimates by population (as we show in Table 2), weights by the inverse of this error ratio, or simply drops the worst fits from the analysis.

panel data results using MM's suggested non-population weighted or FGLS approaches (Figures 2 and 3) or the MM synthetic controls estimates (Table 2). Policymakers and citizens should recognize that the best available empirical data to date supports the view that RTC laws have resulted in statistically significant increases in violent crime in the ten-year period after adoption.

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EXHIBIT 4

Easiness of Legal Access to Concealed Firearm Permits and Homicide Rates in the United States


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Objectives. To examine the relation of “shall-issue” laws, in which permits must be issued if requisite criteria are met; “may-issue” laws, which give law enforcement officials wide discretion over whether to issue concealed firearm carry permits or not; and homicide rates.

Methods. We compared homicide rates in shall-issue and may-issue states and total, firearm, nonfirearm, handgun, and long-gun homicide rates in all 50 states during the 25-year period of 1991 to 2015. We included year and state fixed effects and numerous state-level factors in the analysis.

Results. Shall-issue laws were significantly associated with 6.5% higher total homicide rates, 8.6% higher firearm homicide rates, and 10.6% higher handgun homicide rates, but were not significantly associated with long-gun or nonfirearm homicide.

Conclusions. Shall-issue laws are associated with significantly higher rates of total, firearm-related, and handgun-related homicide. (*Am J Public Health.* 2017;107:1923–1929. doi:10.2105/AJPH.2017.304057)

 See also Donohue, p. 1864, and also Galea and Vaughan, p. 1867.

Firearm violence is a major public health problem. In 2015, there were approximately 36 000 firearm-related deaths in the United States; 13 463 were homicides, 22 018 were suicides, and 489 were unintentional injuries.¹ During the same year, 72.9% of homicides were firearm homicides¹ and, of these, approximately 90% were committed with a handgun. A central question in the debate about public policies to reduce firearm violence is whether easier access to concealed handguns increases or decreases the rate of firearm-related homicides.² Some have argued that the feared or actual presence of armed citizens may deter violent crime.³ Others have suggested that a higher prevalence of people carrying guns will increase the likelihood that an altercation results in a fatality.⁴ Thus, having a clear understanding of the impact of concealed-carry laws on firearm-related homicide would help guide policymakers who are aiming to reduce firearm violence.

As of the end of 2015, all states allowed certain persons to carry concealed handguns, but there were 3 major variations in permitting policy⁵ (Table 1). In 9 states, law

enforcement officials had wide discretion over whether to issue concealed-carry permits; these are referred to as “may-issue” states. In 32 states, there was little or no discretion; these are referred to as “shall-issue” states because permits must be issued if requisite criteria are met. In an additional 9 states, there was no permit necessary to carry a concealed handgun; these are referred to as “permitless-carry” states. The wide variation in these policies between states and over time presents the opportunity to compare homicide rates between states with varying concealed-carry permitting policies to examine the impact of concealed-carry laws on homicide.

The critical difference between may-issue and shall-issue laws is that in may-issue

states, law enforcement officials may use their judgment in making decisions about whether to approve or deny a permit application, whereas in shall-issue states, no judgment is involved—the application must be approved unless the applicant is categorically prohibited from concealed handgun possession. In may-issue states, the element of discretion allotted to law enforcement is typically a judgment regarding the “suitability” or “need” of a person to carry a concealed weapon (Table 2). Law enforcement officials have a wide degree of latitude in making these judgments. In shall-issue states, the categorical prohibitions consist of a list of specific criminal convictions.

Unfortunately, the existing literature on the impact of concealed carry laws is inconsistent. At least 10 national studies have examined the relationship between shall-issue concealed-carry laws and firearm-related or total homicide rates at the state level (Table A, available as a supplement to the online version of this article at <http://www.ajph.org>).^{3,6–14} In 2 studies, shall-issue laws were found to decrease homicide rates.^{3,6} In 2 studies, these laws were found to increase homicide rates.^{7,8} Six studies reported no clear impact of shall-issue laws on homicide rates.^{9–14} The inconsistency of these results has understandably created some confusion about what approach is most effective to address the firearm violence problem.

Most of the published literature on this topic includes data that are more than a decade old: the most recent year of data analyzed was

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TABLE 1—Concealed-Carry Permitting Laws and Age-Adjusted Firearm Homicide Rates by US State, 2015, and Status of Laws During the Period of 1991 to 2015

State	Age-Adjusted Firearm Homicide Rate, ^a 2015 (per 100 000)	Status of Concealed-Carry Permitting Law, 2015	Effective Date of Current (as of 2015) Concealed-Carry Law
Hawaii ^b	0.75	May issue	Before 1991
New Hampshire	0.96	Shall issue	Before 1991
Rhode Island	0.99	May issue	Before 1991
Maine	1.14	Shall issue	Before 1991
Massachusetts	1.26	May issue	Before 1991
Utah	1.39	Shall issue	1995
Idaho	1.29	Shall issue	Before 1991
Iowa	1.62	Shall issue	Before 1991
North Dakota	1.69	Shall issue	Before 1991
Vermont	1.76	Permitless carry	Before 1991
Minnesota	1.77	Shall issue	2003
South Dakota	1.97	Shall issue	Before 1991
New York	2.07	May issue	Before 1991
Wyoming	2.16	Permitless carry	2011 ^c
Montana	2.17	Shall issue	Before 1991
Washington	2.32	Shall issue	Before 1991
Oregon	2.35	Shall issue	Before 1991
Connecticut	2.43	May issue	Before 1991
Colorado	2.46	Shall issue	2003
Nebraska	2.67	Shall issue	2007
West Virginia	2.89	Shall issue	Before 1991
Wisconsin	3.18	Shall issue	2011
New Jersey	3.22	May issue	Before 1991
Virginia	3.29	Shall issue	1995
Kansas	3.35	Shall issue	2007
California	3.52	May issue	Before 1991
Arizona	3.56	Permitless carry	2010 ^c
Kentucky	3.96	Shall issue	1996
Texas	4.04	Shall issue	1995
Pennsylvania	4.34	Shall issue	Before 1991
Ohio	4.38	Shall issue	2004
Nevada	4.49	Shall issue	1995
North Carolina	4.54	Shall issue	1995
Indiana	4.61	Shall issue	Before 1991
Florida	4.66	Shall issue	Before 1991
Michigan	4.74	Shall issue	2001
New Mexico	4.79	Shall issue	2001
Alaska	5.22	Permitless carry	2003 ^c

Continued

2010, and only 3 of the 10 studies examined data past the year 1998 (Table A, available as a supplement to the online version of this article at <http://www.ajph.org>). Since 1998, 11 additional states have enacted shall-issue laws.⁵ This provides more variation over time and a longer follow-up period to examine this research question. Moreover, Ayres and Donohue¹⁵ and Hepburn et al.¹¹ have suggested that the relationship between concealed-carry laws and homicide rates may have been different during the period before and after the early 1990s. In addition, studies that included homicide rates from before 1994 were examining a trend that was increasing, whereas studies examining homicide rates after 1994 were capturing declining trends. For these reasons, a reexamination of this research question with more recent data is needed.

One limitation of the existing literature is that no previously published research has examined the specific impact of concealed-carry laws on handgun versus long-gun homicide rates. This is important because if such laws increase homicide by making it easier for people at high risk for violence to carry handguns, this effect should only be observed in relation to handgun-related homicides, not homicides committed with long guns. On the other hand, if permissive concealed-carry laws deter crime by generating fear among potential perpetrators of encountering an armed individual, then all crime including handgun, long-gun, and nonfirearm homicide should decrease.

Another limitation of previous studies is that nearly all of them used linear models. However, homicide rates represent count data, and the distribution of homicide rates across states is highly skewed¹⁶ (Figure A, available as a supplement to the online version of this article at <http://www.ajph.org>). Plassmann and Tideman argued that a count model (such as a Poisson or negative binomial model) is the most reliable for analyzing crimes, such as homicides, with low occurrence rates.¹⁶ Beyond the Plassmann and Tideman study, only 1 other study¹¹ used a count model.

We examined the relationship between shall-issue concealed-carry laws and total, firearm-related, and non-firearm-related homicide rates, as well as handgun versus long-gun homicide rates across all 50 states

TABLE 1—Continued

State	Age-Adjusted Firearm Homicide Rate, ^a 2015 (per 100 000)	Status of Concealed-Carry Permitting Law, 2015	Effective Date of Current (as of 2015) Concealed-Carry Law
Arkansas	5.34	Shall issue	1995
Illinois	5.45	Shall issue	2013
Tennessee	5.51	Shall issue	1994
Georgia	5.73	Shall issue	Before 1991
Oklahoma	5.87	Shall issue	1995
Delaware	6.12	May issue	Before 1991
South Carolina	7.55	Shall issue	1996
Maryland	7.69	May issue	Before 1991
Missouri	7.92	Shall issue	2003
Alabama	8.43	Shall issue	2013
Mississippi	9.11	Shall issue	1991
Louisiana	9.96	Shall issue	1996

Note. “May-issue” states are those in which law enforcement officials had wide discretion over whether to issue concealed-carry permits. “Shall-issue” states are those in which there was little or no discretion; permits must be issued if requisite criteria are met. “Permitless-carry” states are those in which there was no permit necessary to carry a concealed handgun.

^aFrom Centers for Disease Control and Prevention (CDC).¹

^bData for Hawaii are unavailable for the years 2010 to 2015 because the CDC’s Web-Based Injury Statistics Query and Reporting Systems does not report homicide counts fewer than 10. The data here are from 2009.

^cChanged from “may issue” to “shall issue” in 1994.

during the 25-year time period of 1991 to 2015 with both count and linear regression models. We examined the specificity of the relationship between concealed-carry laws and homicide rates by separately modeling firearm versus nonfirearm homicide rates and then within firearm-related homicides by modeling handgun versus long-gun homicide rates. We analyzed the relationship between shall-issue concealed-carry laws and homicide rates by using both a count and a linear regression model, thus examining the robustness of results to the type of model used.

METHODS

We used a quasi-experimental panel design, taking advantage of changes in state concealed-carry permitting laws over time, to explore the relationship between these laws and total, firearm-related, and non-firearm-related homicide rates in the 50 states over a 25-year period, 1991 to 2015. We

modeled homicide rates in 2 ways: (1) using a negative binomial regression with homicide rates as the outcome variable and (2) using linear regression with log-transformed homicide rates as the outcome variable. In both cases, we included year and state fixed effects and controlled for a range of time-varying, state-level factors.

Variables and Data Sources

Outcome variables. The main outcome variable was the age-adjusted firearm homicide rate in each year analyzed. For example, Missouri’s shall-issue law went into effect in 2003; thus, we analyzed homicide rates associated with Missouri’s shall-issue law for the years 2004 to 2015. We obtained homicide rates from the Centers for Disease Control and Prevention’s (CDC’s) Web-Based Injury Statistics Query and Reporting Systems (WISQARS) database.¹ This is the ideal source for homicide data because there is complete annual reporting from all 50 states and because the data are extracted from the

Vital Statistics death registry maintained by the National Center for Health Statistics, which is based on standardized death certificates. The completeness of reporting is approximately 99%.¹⁷ The CDC age-adjusted the rates to the 2000 standard population.

The second outcome variable was the handgun or long-gun homicide rate, obtained from the Federal Bureau of Investigation’s Uniform Crime Reports, Supplemental Homicide Reports (SHR).¹⁸ Although WISQARS does provide mortality data from *International Classification of Diseases, Ninth Revision* and *Tenth Revision*, codes that can list handgun and long gun as the cause of death, unfortunately, most death certificates involving a firearm homicide do not specify the type of weapon used. Therefore, most firearm homicide deaths in WISQARS are classified as “other and unspecified” firearm, and it is not possible to use these data to disaggregate handgun and long-gun homicides.¹⁹ By contrast, the SHR is missing data on the type of weapon used in firearm homicides in just 13.4% of cases. Thus, the SHR is the best, if not only, source for state-specific, firearm type-specific homicide data.

The SHR disaggregates firearm homicides into handgun, rifle, shotgun, and other (and unknown). We used the handgun deaths to generate handgun homicide rates and the sum of rifle, shotgun, and other gun deaths to generate long-gun homicide rates for each state and year. Although SHR data may include listing of multiple weapons in an incident, only 1 weapon may be associated with a homicide death.²⁰ Because of missing data on weapon type, we excluded 13.4% of firearm homicide cases in estimating handgun homicide rates. Nevertheless, there was little discrepancy between the firearm homicide totals from WISQARS and the SHR, which were correlated at $r = 0.98$.

Because not all local law enforcement agencies complete the supplemental reports, the SHR data set excludes approximately 10% of all homicides.²¹ This problem was addressed by applying weights that adjusted each state- and year-specific estimate up to the overall number of homicides reported in the Uniform Crime Report for that state and year. Fox kindly provided us with updated SHR files that added previously

TABLE 2—Elements of Discretion in Law Enforcement Decisions to Approve or Deny Concealed Handgun Carry Permits: “May-Issue” US States, 2015

State	Elements of Discretion	Citation
California	Applicant must be of “good moral character” and must have “good cause” for issuance of the license.	California Penal Code § 26150, § 26155
Connecticut	Applicant must intend only to make “legal use” of the handgun and must be a “suitable person to receive such permit.”	Connecticut General Statutes § 29-28
Delaware	Applicant must be “of good moral character,” must desire the handgun for “personal protection” or “protection of the person’s property,” and must submit signed, written statements of 5 “respectable citizens” of the county who testify that the applicant is a person “of sobriety and good moral character” and “bears a good reputation for peace and good order in the community” and that a handgun is “necessary for the protection of the applicant or the applicant’s property.” The Superior Court has discretion to approve or deny the application.	Delaware Code § 1441
Hawaii	Must be “an exceptional case,” the applicant must show “reason to fear injury to the applicant’s person or property,” the applicant must be “a suitable person” to be licensed, and the chief of police must determine that the person “is qualified to use the firearm in a safe manner.”	Hawaii Revised Statutes § 134-9
Maryland	Applicant must have a “good and substantial reason to wear, carry, or transport a handgun, such as a finding that the permit is necessary as a reasonable precaution against apprehended danger,” and the applicant must not have “exhibited a propensity for violence or instability that may reasonably render the person’s possession of a handgun a danger to the person or to another.”	Maryland Public Safety Code § 5-306
Massachusetts	Applicant must be a “suitable” person and must not be judged to potentially create a risk to public safety.	Massachusetts General Laws 140 § 131
New Jersey	Applicant must demonstrate a “justifiable need to carry a handgun” and must submit endorsements by 3 individuals who have known the applicant for at least 3 years that the applicant is “a person of good moral character and behavior.”	New Jersey Statutes § 2C:58-4
New York	Applicant must be “of good moral character,” must be “of good character, competency, and integrity,” and there must be no “good cause” for denial of the license.	New York Penal Law § 400.00
Rhode Island	Applicant must have “good reason to fear an injury to his or her person or property” or have “any other proper reason” for carrying a handgun and must be a “suitable person to be so licensed.”	General Laws of Rhode Island § 11-47-11

Note. “May-issue” states are those in which law enforcement officials had wide discretion over whether to issue concealed-carry permits.

missing data for Florida and included data through 2015.²¹

Main predictor variable. Using *Thomson Reuters Westlaw* to access historical state statutes and session laws, we developed a database indicating the presence or absence of 100 provisions of firearm laws in each state over the 25-year period.⁵ We coded laws by the year they went into effect, regardless of the month of the effective date. However, in the analytic models, we lagged the state laws by 1 year, which ensured that all laws were in effect during the year in which their impact was being assessed. Following Lott and Mustard,²² we assessed the impact of laws starting in the first full year they were in effect.

We examined the potential impact of shall-issue laws, comparing them to may-issue laws. In other words, using the may-issue states as the reference group, we

estimated the impact of shall-issue laws on homicide rates. Because only 4 states had permitless-carry laws in place during the study period, there were not enough observations to allow any meaningful analyses of these laws. Therefore, we deleted state-year observations in which a permitless-carry law was in effect.

Control variables. We controlled for 12 state-level factors that (1) were found in the previous literature^{3,6-14} to be significantly related to homicide rates and (2) were significantly related to the presence of shall-issue laws in our data set (i.e., the regression coefficient for the variable was significant at a level of $P = .05$ in a logistic regression with shall-issue law as the dependent variable): household firearm ownership (using the standard proxy, which is the percentage of all suicides committed with a firearm), proportion of Blacks, proportion of young adults

(aged 18 to 29 years), proportion of men among young adults, proportion of the population living in urban areas, total population, population density, per capita alcohol consumption, the nonhomicide violent crime rate (aggravated assault, robbery, and forcible rape), the poverty rate, unemployment rate, median household income, per capita disposable income, incarceration rate, and per capita number of law enforcement officers. Variable definitions and data sources are provided in Table B, available as a supplement to the online version of this article at <http://www.ajph.org>. We also controlled for the following state firearm laws that could serve as alternative explanations for changes in homicide during the study period: (1) universal background checks required for all handgun purchases, (2) waiting periods required for all handgun purchases, and (3)

permits required to purchase or possess firearms.

Analysis

Count models. Because homicide rates are not normally distributed but skewed and overdispersed, we modeled this outcome by using a negative binomial distribution. To control for clustering in our data by year (25 levels) and by state (50 levels), we entered year and state as fixed effects in the regression models. We used robust standard errors that account for the clustering of observations, serial autocorrelation, and heteroskedasticity.²³

Our final model was as follows:

$$(1) \Pr(H_{st} = h_{st}) = \frac{\Gamma(y_{st} + \alpha^{-1})}{\Gamma((y_{st} + 1)\Gamma\alpha^{-1})} [1 / (1 + \alpha \mu_{st})]^{1\alpha} [\mu_{st} / (\alpha^{-1} + \mu_{st})]^{y_{st}}$$

where $\Pr(H_{st} = h_{st})$ is the probability that state s in year t has a homicide rate equal to h_{st} , $E(H_{st}) = \mu_{st}$, and $Var(H_{st}) = \mu_{st} + \mu_{st}^2$.

The mean homicide rate was then modeled as follows:

$$(2) \ln(\mu_{st}) = \alpha + \beta_1 CC_{st} + \beta_2 C_{st} + S + T + e,$$

where CC_{st} is a dummy variable for the presence of a shall-issue law, C is a vector of control variables, S represents state fixed effects, and T represents year fixed effects.

The negative binomial regression coefficients are reported as incidence rate ratios (IRRs). The IRR indicates the percentage difference in homicide rate for states with a shall-issue concealed-carry law compared with states with a may-issue law.

Linear models. To check the robustness of our findings, we repeated the analyses with a linear regression model, with the log-transformed homicide rate as the outcome variable, again by using robust standard errors.²³ As with the negative binomial models, we included year and state fixed effects, and we included the same state-level control variables.

We conducted analyses with Stata version 14.1 (StataCorp LP, College Station, TX).

We evaluated the significance of regression coefficients by using a Wald test at $\alpha = 0.05$.

We checked the robustness of our results by conducting several sensitivity analyses, including

1. Restricting the analysis to the 23 states in which shall-issue laws were adopted during the study period,
2. Using raw count data instead of homicide rates,
3. Restricting the analysis to states with population greater than 1 000 000,
4. Restricting the analysis to the period 1991 to 2002,
5. Restricting the analysis to the period 2003 to 2015, and
6. Using SHR instead of WISQARS homicide data (thus avoiding the problem of missing data for some smaller states after 1998).

RESULTS

During the study period, 23 states adopted shall-issue laws (Table 1). By 2015, 37 states had such laws. In the same year, the average firearm homicide rate in the states with shall-issue laws was 4.11 per 100 000, compared with 3.41 per 100 000 in the may-issue states. The number of states that had permitless-carry laws in effect at all during the study period was small ($n = 4$), as was the number of observations ($n = 46$), limiting our ability to analyze the impact of these laws. Because CDC does not report homicide counts of fewer than 10 in years after 1998, we were missing outcome data for several years for 6 states (Hawaii, New Hampshire, North Dakota, South Dakota, Vermont, and Wyoming); a sensitivity analysis with SHR data revealed that these omissions do not affect our findings.

In negative binomial regression models, shall-issue concealed-carry permitting laws were significantly associated with 6.5% higher total homicide rates compared with may-issue states (IRR = 1.065; 95% confidence interval [CI] = 1.032, 1.099; Table 3). The association was specific to firearm homicide rates, which were 8.6% higher in shall-issue states (IRR = 1.086; 95% CI = 1.047, 1.126). There was no significant

association between shall-issue laws and nonfirearm homicide rates (IRR = 1.014; 95% CI = 0.963, 1.068). Further disaggregation within firearm homicides showed that the association between shall-issue laws and firearm homicide rates was specific to handgun homicide. Shall-issue states had handgun homicide rates that were 10.6% higher (IRR = 1.106; 95% CI = 1.039, 1.177), but there was no significant association with long-gun homicide rates (IRR = 0.999; 95% CI = 0.915, 1.090).

The results of the linear regression analyses were similar. Here, shall-issue laws were significantly associated with 6.6% higher total homicide rates compared with may-issue states (95% CI = 3.0%, 10.4%; data not shown). The association was specific to firearm homicide rates, which were 11.7% higher in “shall issue” states (95% CI = 6.4%, 17.2%); there was no significant association between these laws and nonfirearm homicide rates. Further disaggregation within firearm homicides showed that the association between shall-issue laws and firearm homicide rates was specific to handgun homicide. Shall-issue states had handgun homicide rates that were 19.8% higher (95% CI = 10.3%, 30.1%), but rates of long-gun homicide were not significantly different in states with shall-issue compared with may-issue laws.

The significant association between shall-issue laws and higher total, firearm, and handgun-related homicide rates remained when we restricted the analysis to the 23 states in which these laws were adopted during the study period (Table 3). This pattern of results was robust to a series of additional sensitivity checks, including using raw count data, restricting the analysis to states with a population of more than 1 000 000, restricting the analysis to the period 1991 to 2002, restricting the analysis to the period 2003 to 2015, and using SHR instead of WISQARS homicide data.

DISCUSSION

To the best of our knowledge, this is the first study to examine the relationship between concealed-carry permitting laws and handgun-specific homicide rates. We found that, when we used both count and linear

models and after we controlled for a range of time-varying state factors and for unobserved time-invariant state factors by using a fixed-effects model, shall-issue concealed-carry permitting laws were significantly associated with 6.5% higher total homicide rates, 8.6% higher firearm-related homicide rates, and 10.6% higher handgun-specific homicide rates compared with may-issue states.

A major reason for inconsistent results in the existing literature on the effects of concealed-carry laws may be that the relationship between concealed-carry laws and homicide rates was different during the period before and after the early 1990s.^{11,15} It is possible that despite the enactment of early shall-issue laws in the 1970s and 1980s, the demand for handgun permits in those states was modest. There has been a striking increase in the demand for pistols, especially those designed for concealed carry, during the past decade.²⁴ Recently, Steidley found that the adoption of shall-issue laws during the period 1999 to 2013 was associated with a persistent, long-term increase in handgun sales in all 7 states studied.²⁵ Our analysis provides further support for the hypothesis that the relationship between shall-issue laws and higher homicide rates increased over time, as the regression coefficients for these laws was higher for the second half of the study period

(2003–2015) compared with the first half (1991–2002).

Our finding that the association between shall-issue laws and homicide rates is specific to handgun homicides adds plausibility to the observed relationship. If the relationship between shall-issue laws and homicide rates were spurious, one might expect to see the relationship hold for long-gun as well as handgun homicide rates. Moreover, this finding is inconsistent with the hypothesis that permissive concealed-carry laws deter crime by increasing the presence of armed individuals. Were that the case, one would expect to see lower handgun, nonhandgun, and nonfirearm homicide rates in shall-issue compared with may-issue states. The lack of an association between shall-issue laws and long-gun homicide rates is also inconsistent with the hypothesis that the presence of more concealed weapons escalates the level of violence in encounters that may involve a long gun.

Strengths and Limitations

This study has several novel strengths, including the use of both count and linear models, the use of recent data (through 2015), and the disaggregation of homicide rates. Nevertheless, caution should be exercised in assessing causality from an ecological study

such as this one. In particular, these results should be interpreted with caution because of the possibility that they reflect a reverse association. That is, it is possible that the adoption of shall-issue concealed carry laws is associated with higher baseline homicide rates so that we are picking up not a causal effect of these laws on homicide but a systematic difference in baseline homicide rates between states that do or do not have these laws. However, our findings hold even when the analysis is restricted to states that started with may-issue laws at the beginning of the study period and adopted shall-issue laws during the study period.

An additional limitation of this study is that we could not consider the enforcement of concealed-carry laws.²⁶ Enforcement of these laws may vary not only among states, but also among counties in the same state.¹¹ In addition, we did not have information on the number of concealed-carry permits issued in each state or the number of homicides committed by concealed-carry permittees.

It is also important to note that we examined only fatal firearm injuries. Further research should investigate potential effects of concealed-carry laws on nonfatal firearm injuries.

Finally, we were unable to analyze the impact of permitless-carry laws because of the small number of observations. Only 4 states

TABLE 3—Sensitivity Analyses of Relationship Between “Shall-Issue” Concealed-Carry Permitting Laws and Homicide Rates: United States, 1991–2015

Type of Analysis	Homicide Rate, IRR (95% CI)		
	Total	Firearm	Handgun
Main analysis	1.065 (1.032, 1.099)	1.086 (1.047, 1.126)	1.106 (1.039, 1.177)
Analysis restricted to states that adopted shall-issue concealed-carry laws during study period	1.063 (1.028, 1.099)	1.068 (1.030, 1.108)	1.074 (1.002, 1.150)
Analysis using raw count of homicides with population as the exposure variable	1.051 (1.020, 1.083)	1.079 (1.039, 1.120)	1.139 (1.067, 1.217)
Analysis restricted to states with population > 1 million	1.055 (1.023, 1.087)	1.067 (1.030, 1.105)	1.095 (1.029, 1.166)
Analysis restricted to years before 2003 (1991–2002)	1.058 (1.014, 1.104)	1.067 (1.019, 1.116)	1.107 (1.037, 1.180)
Analysis restricted to years after 2002 (2003–2015)	1.064 (1.009, 1.122)	1.100 (1.028, 1.176)	1.274 (1.092, 1.488)
Analysis using Supplemental Homicide Report data instead of Vital Statistics data	1.044 (1.006, 1.083)	1.094 (1.047, 1.143)	1.106 (1.039, 1.177)

Note. “Shall-issue” states are those in which there was little or no discretion; permits must be issued if requisite criteria are met. CI = confidence interval; IRR = incidence rate ratio. All models include year and state fixed effects and control for the following time-varying, state-level factors: household gun-ownership levels, proportion of young men, proportion of young adults, proportion of Blacks, proportion living in an urban area, total population, population density, median household income, poverty rate, unemployment rate, per capita disposable income, per capita alcohol consumption, violent crime rate, incarceration rate, per capita law enforcement officers, universal background check laws for all handguns, waiting periods for all handguns, and permits required for all firearms.

had permitless-carry laws in place during the study period. However, in the past 2 years, an additional 5 states have enacted such laws. Elucidating the impact of permitless-carry laws will require follow-up for the 9 states that now have such laws in effect.

Conclusions

Despite these limitations, this study suggests that there is a robust association between shall-issue laws and higher rates of firearm homicides. The trend toward increasingly permissive concealed-carry laws is inconsistent with public opinion, which tends to oppose the carrying of guns in public.²⁷ Our findings suggest that these laws may also be inconsistent with the promotion of public safety. **AJPH**

CONTRIBUTORS

M. Siegel conceptualized the study, led the data analysis and writing, and was the principal author of this article. Z. Xuan and C. S. Ross assisted with the study design and analytical plan. All authors contributed toward the interpretation of data analyses, critical review of the article, and revision of the article.

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Note. The views expressed here do not necessarily reflect those of the Robert Wood Johnson Foundation.

HUMAN PARTICIPANT PROTECTION

This study made use of secondary data only and did not require institutional review board approval.

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EXHIBIT 5

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8
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 11

12
 13 **MARK BAIRD and RICHARD**
 14 **GALLARDO,**

15 Plaintiffs,

16 v.

17 **ROB BONTA, in his official capacity as**
 18 **Attorney General of the State of California,**
 19 **and DOES 1-10,**

20 Defendants.

Case No. 2:19-cv-00617-KJM-AC

**EXPERT DECLARATION AND
 REPORT OF FORMER COVINA CHIEF
 OF POLICE KIM RANEY**

Dept: 3
 Judge: Hon. Kimberly J. Mueller

Trial Date: None set
 Action Filed: April 9, 2019

1 I, Kim Raney, declare as follows:

2 1. I am a retired Chief of Police of the Covina (California) Police Department. Counsel
3 for Defendant Attorney General of California Rob Bonta asked me to offer an expert opinion in
4 the above-entitled case. I have personal knowledge of each fact stated in this declaration, and if
5 called as a witness I could and would testify competently thereto.

6 **I. BACKGROUND AND QUALIFICATIONS**

7 2. In October 2016, I retired as the Chief of Police for the Covina Police Department
8 (Department), after 39 years of law-enforcement service. I served as Chief of Police for 15 years,
9 as a Captain for one year, as a Lieutenant for 10 years, as a Sergeant for seven years, and as a
10 police officer for six years. I also served as interim city manager of the City of Covina for four
11 months.

12 3. As Chief of Police, I was responsible for the delivery of public-safety services to a
13 community of 50,000 residents, and the leadership of 100 employees of the Department. This
14 work included compliance with all local, state, and federal mandates, and enforcement and
15 implementation of existing and new policies, as well as ensuring that the Department was a leader
16 in engaging with emerging issues or trends in the criminal-justice system. I was Chief of Police
17 on December 24, 2008, when nine family members in my community were shot and killed at a
18 family holiday celebration, and I provided leadership to the community during this tragedy.

19 4. As a Captain, I was responsible for the Department's Administrative Division, which
20 included oversight of detectives, the 9-1-1 communications center, custody of suspects, and
21 property/evidence.

22 5. As a Lieutenant, I served as a watch commander overseeing patrols on a daily basis,
23 as well as the auditing, training, and compliance for Department employees. I also supervised the
24 Detective Division, which was accountable for investigating all crimes reported to the
25 Department. I also helped to create and supervise a regional mutual-aid platoon comprised of 56
26 officers from 15 area police departments, responsible for activation and deployment in response
27 to any regional emergency or disaster. This work included the creation of a policy manual and
28

1 activation protocols, and coordination of the training for over 100 police officers in topics such as
2 riot response, crowd control, and command-and-control for team leaders.

3 6. As a Sergeant, I was responsible for the first-line supervision of police officers and
4 detectives, including tactical leadership on critical service calls, daily training, evaluation of
5 employees, and supervision of the field training program.

6 7. As a police officer, I was a first responder to all public-safety calls for service. When
7 assigned as a detective, I worked narcotics investigations, regional surveillance, and undercover
8 operations.

9 8. I am Past President of the California Police Chiefs Association. In my role with the
10 California Police Chiefs Association, I spent five years on the Executive Board of Directors,
11 culminating in my service as President in 2013. I was involved in discussions with state and local
12 elected officials on all major legislative or ballot propositions involving law enforcement,
13 including meetings with the Governor and Attorney General on major public-safety issues,
14 legislation, and initiatives. I am also Past President of the Los Angeles County Police Chiefs
15 Association.

16 9. I was one of two California police chiefs to serve on the Stanford Executive Session
17 on Public Safety Realignment, which refers to legislation passed in 2011, and sometimes known
18 as Assembly Bill 109, that shifted responsibility for monitoring, tracking, and incarcerating non-
19 serious, non-violent, non-sex offenders from California state to the counties. A report based on
20 the Executive Session's work was submitted to the California State Legislature and the Governor,
21 and is available on the Internet at the following link: [https://www-cdn.law.stanford.edu/wp-](https://www-cdn.law.stanford.edu/wp-content/uploads/2015/10/ES-Consensus-Report-final-report.pdf)
22 [content/uploads/2015/10/ES-Consensus-Report-final-report.pdf](https://www-cdn.law.stanford.edu/wp-content/uploads/2015/10/ES-Consensus-Report-final-report.pdf).

23 10. I served on the Executive Steering Committee for the California Board of State and
24 Community Corrections, which committee was tasked with creating a new definition of the term
25 "recidivism" for statewide use, pursuant to Assembly Bill 1050.

26 11. I have lectured to law-enforcement leaders and elected officials throughout California
27 and the United States on issues such as leading a community in dealing with a mass shooting, the
28

1 decriminalization of marijuana and its impact on communities, and public-safety realignment
2 (Assembly Bill 109) in California.

3 12. I have received numerous awards throughout my career, including the Joe Malloy
4 Award, the most prestigious award that the California Police Chiefs Association presents. This
5 award is presented to one California police chief every year, and is bestowed based upon the
6 recipient's professionalism, leadership, and contributions to and impacts on the profession of law
7 enforcement.

8 13. I have a Bachelor of Science Degree in Organizational Leadership from Azusa Pacific
9 University. I have a certificate for completing an eight-month law-enforcement-oriented program
10 at the University of Southern California School of Public Policy, as well as a certificate for
11 completing 40 hours of training at the FBI Southwest Command College.

12 14. A copy of my current resume is attached to this declaration as Exhibit A.

13 15. I wrote an article for the International Association of Chiefs of Police, titled
14 "Proposition 19: California's Marijuana Legalization Debate," which appeared in the October
15 2010 issue of *The Police Chief Magazine*. A portion of this publication is available on the
16 Internet at the following link: [http://www.policechiefmagazine.org/proposition-19-californias-](http://www.policechiefmagazine.org/proposition-19-californias-marijuana-legalization-debate)
17 [marijuana-legalization-debate](http://www.policechiefmagazine.org/proposition-19-californias-marijuana-legalization-debate).

18 16. I have testified as an expert in the following cases: *Flanagan v. Becerra* (C.D. Cal.
19 No. 2:16-cv-06164-JAK-AS), *Forsyth, Holliday, and Shea v. City of Buena Park Police*
20 *Department* (Orange County Super. Ct. BU010-037), and *Moreno, et al. v. City of Beverly Hills*
21 (Los Angeles Super. Ct. BC687003).

22 17. I am being compensated for services performed in the above-entitled case at an
23 hourly rate of \$250 for reviewing materials, participating in meetings, and preparing reports, and
24 \$350 for depositions and court appearances (including travel time). My compensation is not in
25 any way dependent on the outcome of this or any related proceeding, or on the substance of my
26 opinion.

1 **II. MATERIALS REVIEWED**

2 18. Counsel for Defendant has provided me, and I have reviewed, the complaints, the
3 preliminary injunction briefing and order, and the declaration of Charles Haggard in the above-
4 entitled case.

5 19. I prepared an expert report in *Flanagan v. Becerra* (ECF No. 45-13) that is
6 substantially similar to this declaration. In the course of preparing that report, I reviewed the
7 following materials:

- 8 • Papers filed in *Flanagan v. Becerra* (C.D. Cal. No. 2:16-cv-06164-JAK-AS):
9 Complaint for Declaratory and Injunctive Relief (ECF No. 1); Notice of Motion and
10 Motion to Dismiss Complaint for Declaratory and Injunctive Relief (ECF No. 24).
- 11 • Papers filed in *Nichols v. Brown* (9th Cir. No. 14-55873): Appellees' Brief (ECF No.
12 36-1); Brady Center to Prevent Gun Violence's Motion for Leave to File Amicus Brief
13 in Support of Defendants-Appellees (ECF No. 41-1); Motion for Leave to File Brief of
14 Amicus Curiae Law Center to Prevent Gun Violence in Support of Appellees and
15 Affirmance (ECF No. 44-1).
- 16 • Manny Fernandez, Alan Blinder, and David Montgomery, "Texas Open-Carry Laws
17 Blurred Lines Between Suspects and Marchers," *N.Y. Times*, July 10, 2016.
- 18 • California Penal Code sections 25400, 25600, 25605, 25655, 25850, 26150, 26155,
19 26160, 26165, 26170, 26350, 26361, 26362, 26364, 26366, 26377, 26378, 26383,
20 26389, 26400, and 26405.
- 21 • Analyses of Assembly Bill 144 (2011-2012 Reg. Sess.): Assembly Public Safety
22 Committee Analysis (Apr. 12, 2011); Senate Public Safety Committee Analysis (Jun. 7,
23 2011); Senate Floor Analysis (Jun. 28, 2011).¹
- 24 • Analyses of Assembly Bill 1527 (2011-2012 Reg. Sess.): Assembly Public Safety
25 Committee Analysis (Mar. 27, 2012); Assembly Appropriations Committee Analysis
26

27 ¹ Available at
28 https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201120120AB144.

1 (Apr. 18, 2012); Senate Public Safety Committee Analysis (June 26, 2012); Senate
2 Floor Analysis (Aug. 23, 2012).²

- 3 • San Mateo County Sheriff’s Office, “Unloaded Open Carry” (Jan. 14, 2010).

4 20. Other than these materials, the materials that I have relied upon are cited in the notes
5 accompanying the text of this declaration.

6 **III. OPINIONS**

7 21. Counsel for Defendant has asked me to express opinions on how restrictions on the
8 open carry of firearms affect public safety. My overall opinion on this question is that restrictions
9 on the open carry of firearms greatly enhance public safety.

10 22. From a law-enforcement perspective, the restrictions on the open carry of firearms in
11 California have been critical to the safety of law-enforcement officers, our communities, and
12 those people who would want to openly carry firearms in public. Law-enforcement officers are
13 taught that guns can be a dangerous and deadly threat to their safety and the safety of the public
14 they serve. Throughout a police officer’s career, his or her training emphasizes officer-safety
15 tactics that place the officer in positions of advantage when dealing with incidents involving
16 firearms. Police officers understand that any encounter involving a firearm can be both
17 dangerous and grave. When police respond to a “man with a gun” call, officers typically are
18 responding to a situation about which they have few details, other than that a person is at a
19 location; the person is armed; and perhaps a description of the person. At least two police
20 officers will be dispatched to each of these types of calls, which are of the highest priority. Upon
21 arrival, the officers must rapidly assess the armed person’s behavior in regards to the public’s
22 safety, the armed person’s safety, and the officers’ own safety. The officers may have no idea
23 about the armed person’s motives, intent, mental condition, or emotional stability. The armed
24 person’s behavior and ability or failure to comply with law enforcement’s instructions will have
25 great bearing on the outcome of the contact. Should the armed person fail to comply with an
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27 _____
28 ² Available at https://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201120120AB1527.

1 officer's instructions or move in a way that could be construed as threatening, the results could be
2 deadly.

3 23. In the event of a call for service regarding a violent crime involving a firearm, an
4 environment that allows the open carry of firearms complicates the police response, and could
5 unnecessarily divert critical police resources from the primary event. On a call about an armed
6 robbery, officers will be given the location of the event as well as a description of the suspect, if
7 that information is obtainable from any witnesses. Any person in, around, or leaving the area of
8 the crime who matches the description provided has a high likelihood of being detained by
9 responding law-enforcement personnel. The current restrictions on open carry in California help
10 ensure that law-enforcement resources are not unnecessarily diverted or distracted by people who
11 are in the vicinity and carrying firearms, and may generally match the description provided by
12 witnesses.

13 24. When police officers encounter a person with a firearm, even one that may be legally
14 possessed, officers usually have few details to help them quickly determine the armed person's
15 intent or whether that person is a threat to the officer, the public, or the armed person. Split-
16 second decisions sometimes have to be made, and unintended consequences can and do occur.
17 The split-second decision police officers have to make may be judged by other people who have
18 the luxury of time, additional information, and a controlled environment that the police officers
19 did not have.

20 25. In the event of an active shooter, the presence of civilians openly carrying firearms
21 has the potential to create deadly scenarios, as well as delaying first responders from the primary
22 mission, to stop the shooter and save lives. As appropriately stated by Dallas Chief of Police
23 David Brown in the aftermath of an active shooter in Dallas at a community protest that included
24 the presence of openly carrying civilians—where the shooter caused the deaths of five police
25 officers and the wounding of nine officers and two civilians—“We don't know who the good guy
26 is versus the bad guy when everyone starts shooting.”³

27 _____
28 ³ Molly Hennessy-Fiske, “Dallas Police Chief: Open Carry Makes Things Confusing During
Mass Shootings,” *Los Angeles Times* (Jul. 11, 2016).

1 26. The criminal-justice system in California is currently recalibrating itself, and law-
2 enforcement resources are both limited and at a premium. After years of declining crime rates,
3 violent crime in California has ticked upward in recent years.⁴ This trend requires law-
4 enforcement resources to be reevaluated and deployed for maximum effectiveness in their
5 communities, to slow or stop this troubling trend. In addition, law-enforcement officers have
6 increasingly become the safety net and first responders for a myriad of social issues, including
7 homelessness and mental-health calls for service. The restrictions currently in place on the open
8 carry of firearms ensure that critical law-enforcement resources are not being diverted for
9 unnecessary calls for service at incidents of the public display of firearms, which incidents, again,
10 would receive a priority response involving multiple officers.

11 27. As law-enforcement executives, police chiefs and sheriffs across California are
12 constantly working to improve and enhance the relationship between law enforcement and the
13 communities we serve. The restrictions on open carry in California help ensure that law-
14 enforcement personnel are not unnecessarily spending time on public contacts involving the open
15 carrying of firearms. Police are very sensitive to seeing a gun in public or on open display, even
16 if allowed by law. In an era where law enforcement is spending considerable time and resources
17 to improve mutual trust and respect with our communities, an open-carry environment would lead
18 to increased tensions.

19 28. From a community-safety perspective, California's restrictions on the open carry of
20 firearms is critical to a healthy, vibrant, and safe environment for our residents to live, shop, dine,
21 worship, and enjoy recreational opportunities. Inserting firearms carried openly into a
22 community setting, especially in urban or suburban communities, would create a highly stressful
23 and unsafe environment for everyone, including the person in possession of the firearm.
24 Unfortunately, in today's society, shootings, including mass shootings, have become fairly
25 commonplace. The presence of a firearm carried openly, or (sometimes) concealed, in places

26 _____
27 ⁴ Public Policy Institute of California, "Crime Trends in California" (Aug. 2016),
28 http://www.ppic.org/main/publication_show.asp?i=1036. This study defines "violent crimes" as
"homicide, rape, robbery and aggravated assault." See <https://www.ppic.org/data-set/crime-rates-in-california/>.


1 visited by the public, including parks, open retail or entertainment venues, theaters, restaurants, or
2 community or political events, has the high potential to create panic and chaos, and would result
3 in an immediate law-enforcement response.

4 29. People including families want to feel safe, whether at home or in a public setting.
5 Parents want safe parks for their children, and the presence of an unknown (or maybe even
6 known) person in possession of a firearm will have a chilling effect. In a community setting
7 where a person openly carries a firearm, the likelihood is that no one else in that setting knows the
8 armed person's intention, mental condition, or emotional state or stability, creating an
9 environment of extreme uneasiness or fear.

10 30. Regarding the person with the firearm, what are his or her qualifications, training,
11 marksmanship, mental state, emotional maturity, decision-making process under stress—all the
12 components and more that come with making a decision to use a firearm? Is there an intoxicant
13 involved? If so, the ability to make sound decisions is sometimes greatly compromised. If put in
14 a situation where the armed person feels the need to deploy the firearm, what is his or her ability
15 to de-escalate the situation? A person in legal possession of a firearm may perceive a threat in a
16 situation where a threat is non-existent; the presence of a firearm serves only to escalate the
17 situation. A person armed with a firearm may decide to use deadly force where it is not clearly
18 required, creating a deadly situation that did not exist before. People in our communities will
19 demand answers to these questions.

20 I declare under penalty of perjury that the foregoing is true and correct. Executed on
21 August 27, 2021, at Kailua-Kona, Hawaii.

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KIM RANEY
Former Chief of Police, Covina, CA

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EXHIBIT A

Kim Raney

Summary of qualifications

- Accomplished and experienced Chief of Police - skilled at leading, directing, and managing sworn and civilian personnel
- Approachable, forthright, and fair – adept at establishing an environment that facilitates individual and organizational success and requires accountability
- Provide excellent law enforcement services with limited fiscal resources
- Possess the confidence and experience to make sound policy decisions and resolve problems
- Effective communication, presentation and public speaking skills
- Respected Law Enforcement Leader at the local, regional, and state level

Professional Experience

City of Covina Police Department

Chief of Police (2001-2016)

- Provide excellent, proactive law enforcement service to a community of 50,000
- Leadership of a Police Department with 60 sworn personnel, 50 civilian employees, and 40 volunteers
- Effectively manage a \$20 million budget
- Led a cultural change within the organization
- Led an internal reorganization of department structure
- Established excellent relationships with all community stakeholders, including business, education, and residential constituents
- Work with other Department Heads in a team environment
- Past President – California Police Chiefs Association
- Past President - Los Angeles County Police Chiefs Association

Police Captain (2000-2001)

Police Lieutenant (1990-2000)

Police Sergeant (1984-2000)

Police Officer (1977-1984)

**Education/
Certificates**

Azusa Pacific University – Azusa, CA
Bachelor of Science, Organizational Leadership
POST Certificates – Executive, Management, Supervisory, Advanced, Basic
FBI Southwest Command College
USC School of Public Policy

**Professional
memberships**

California Police Chiefs Association – President 2013-14
Los Angeles County Police Chiefs Association – President 2008-09
San Gabriel Valley Police Chiefs Association – President 2005
International Association of Chiefs of Police
Stanford University Law School – Steering Committee on AB 109
Board of State and Community Corrections – Executive Steering Committee
Los Angeles Regional Interoperable Communications System (LA-RICS) –
Board of Directors

**Community
activities**

Covina Chamber of Commerce
Covina Sunrise Rotary Club
San Gabriel Valley YMCA Board of Directors
Citrus Valley Health Partners – Ethics Committee

EXHIBIT 6

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF CALIFORNIA

--o0o--

MARK BAIRD and RICHARD
GALLARDO,

Plaintiffs,

vs.

No. 2:19-cv-00617-KJM-AC

ROB BONTA, in his official
capacity as Attorney General
of the State of California,
and DOES 1-10,
Defendants.

/

VIDEOCONFERENCE DEPOSITION OF MARK BAIRD
August 31, 2021

Stenographically Reported by:
Janice L. Belcher, CSR No. 12342
Job No. 4782562
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EXHIBIT 3	9/3/18 Letter	23
EXHIBIT 4	9/3/18 Letter	25
EXHIBIT 5	8/31/21 Email	28

1 VIDEOCONFERENCE DEPOSITION OF MARK BAIRD

2
3 BE IT REMEMBERED, that pursuant to Notice, and on
4 the 31st day of August, 2021, commencing at the hour of
5 9:02 a.m., Pacific Standard Time, via videoconference
6 before me, JANICE L. BELCHER, a Certified Shorthand
7 Reporter, appeared MARK BAIRD, produced as a witness in
8 said action, and being by me first duly sworn, was
9 thereupon examined as a witness in said cause.

10
11 --o0o--

12
13 APPEARANCES VIA VIDEOCONFERENCE:

14 For Plaintiffs:

15 AMY BELLANTONI
Bellantoni Law Firm
16 2 Overhill Road, Suite 400
Scarsdale, New York 10583
17 (914)367-0090
info@bellantoni-law.com

18
19 For Defendant Attorney General Rob Bonta:

20 R. MATTHEW WISE
Deputy Attorney General
21 1300 I Street, Suite 125
P.O. Box 944255
22 Sacramento, California 94244
(916)210-6046
23 matthew.wise@doj.ca.gov

24 Also Present:

25 RICHARD GALLARDO

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MARK BAIRD,
sworn as a witness,
testified as follows:

EXAMINATION

BY MR. WISE:

Q Good morning. My name is Matthew Wise. And I represent the California Attorney General in this case, with which is Baird vs. Bonta.

Would you state your full name and spell your last name for the record.

A Mark Allen Baird, B-A-I-R-D.

Q Do you understand that you're testifying here today under the same oath that you would as if you were testifying in a courtroom?

A I do.

Q Have you ever had your deposition taken?

A Yes.

Q And how many times?

A I don't know.

Q Approximately?

A I don't know.

Q So you're familiar with the deposition rules?

A Well, I don't know that I'm familiar with them. I've been on one side of the table before.

1 A 30 years ago.

2 Q Are you familiar with Siskiyou County's policy
3 on carrying firearms?

4 A Yes, I believe so.

5 Q Would you tell us what you understand that
6 policy to be?

7 A It's the policy of Siskiyou County that you may
8 carry a firearm if you receive government permission to
9 do so.

10 Q As far as you understand, does the Siskiyou
11 sheriff issue licenses to carry a firearm concealed?

12 A It's my understanding that he does so when he
13 wishes to.

14 Q As far as you understand, is the Siskiyou
15 sheriff permitted by state law to issue licenses to
16 carry to firearm openly?

17 A He is permitted by state law, yes.

18 Q As far as you know, does the Siskiyou sheriff
19 issue open carry licenses?

20 A No, he does not.

21 Q Do you know why sheriff --

22 A No sheriff in California issues open carry
23 licenses.

24 Q And how do you know that?

25 A Because I did a FOIA request or whatever the

1 state calls that, an information request and received
2 information from the Department of Justice that they
3 have absolutely no record of any sheriff ever issuing an
4 open carry license in the state of California.

5 MR. WISE: Okay. Let's take a look at
6 Exhibit 1. Just give me a moment.

7 (Exhibit 1 marked for identification.)

8 BY MR. WISE:

9 Q Can you see that?

10 A Yes. I can see a partial, the top two-thirds
11 of the page.

12 Q Are you familiar with this document?

13 A Yes, I am.

14 Q What is it?

15 A That's the response I received from the
16 Department of Justice regarding my information request.

17 Q So you were making a request to the California
18 Department of Justice seeking the number of open carry
19 licenses issued in the state of California since 2012;
20 is that right?

21 A That's correct.

22 Q And just to be clear, what was the Department
23 of Justice's response to your question?

24 A They have no records of any such issuance.

25 Q What did the California Department of Justice

1 suggest that you did to get an answer to your question?

2 A I don't remember. I would have to read it on
3 the paper. I don't know if it says on this paper, I
4 don't remember what they said to do.

5 Q Would it refresh your recollection to take a
6 look at the last sentence of the letter?

7 A Okay. Okay.

8 Yes. They advised me to contact local law
9 enforcement agencies in counties with populations under
10 200,000 for this information.

11 Q Did you ever contact any counties in the state
12 of California to determine whether they had issued an
13 open carry license?

14 A I did not because by California Penal Code, it
15 is required that any time a local law enforcement agency
16 issues a carry permit, they are to immediately turn the
17 records of that issuance over to State Department of
18 Justice; therefore, if State Department of Justice has
19 no records, it's because no such carry permit was ever
20 issued according to California Penal Code.

21 Q So that's your understanding of the Penal Code?

22 A That is the Penal Code. Yes.

23 Q Okay. Have -- have you received advice that
24 that's the Penal Code, or is that your interpretation?
25 I just want to understand.

1 carry weapons permit application. In all 58
2 jurisdictions, I do not find one single open carry
3 permit application.

4 Q When did you do that search of the 58 websites?

5 A It was around the September time frame in 2018.
6 And it took quite a long period of time, so it may have
7 taken me a month to complete that.

8 Q Have you taken any other actions to try to
9 obtain an open carry license in a county other than
10 Siskiyou County?

11 A Yes. I'm suing the State of California to have
12 those Penal Codes stricken so that I can avail myself of
13 my Second Amendment guarantees.

14 Q Any other actions other than that?

15 A No, I don't think so.

16 MR. WISE: Okay. Let's go off of record.

17 (Recess.)

18 MR. WISE: Let's go back on the record. And we
19 have an additional exhibit that I have just been
20 provided. So we'll call this Exhibit 5.

21 (Exhibit 5 marked for identification.)

22 BY MR. WISE:

23 Q And let's take a look at it.

24 Mr. Baird, can you see that exhibit?

25 A I can.

1 Q What is it?

2 A That's the response from Sheriff Lopey.

3 Q And what is the date of that response?

4 A Thursday, 6 September, 2018.

5 Q What did -- excuse me -- Sheriff Lopey state in
6 his response?

7 A Well, I can't read the whole thing, so you will
8 have to page down for me a little bit. He says he
9 analyzed the totality of the situation and my request,
10 and he has developed the following thoughts on the
11 issue. He agrees that the Young v. Hawaii, I believe
12 he's referring to, calls into question based on
13 Chambers vs. U.S., I think was, of open carry.
14 26150(b)(2) does not give a sheriff the authority to
15 issue such a permit. And we're tasked with enforcing
16 law, not creating law, so on and so forth.

17 So I believed the best way to pursue this is
18 with the Board of Supervisors.

19 Q Could I interrupt you for just a moment?

20 A Certainly.

21 Q Okay. So he's indicated that his
22 interpretation of the Penal Code is that a sheriff or
23 other law enforcement administrator does not have the
24 authority to issue an open carry permit. Is that how
25 you're understanding the letter?

1 A No, it's not.

2 Q Okay. What is he -- what is your understanding
3 of what he's stating?

4 A He specifically says that 26150(b)(2) PC does
5 not give a sheriff or other law enforcement
6 administrator authority to issue, quote, such a permit.
7 And I'm only assuming that he's referring to open carry
8 permits, and so he feels the plain language of the
9 Penal Code is it -- does not say what it does say.

10 Penal Code 26150(b)(2) specifically gives
11 sheriffs the authority to open -- to issue open carry
12 permits in counties with less than 200,000 people. So
13 what he's saying here is it doesn't say what it clearly
14 says.

15 Q So in other words, you disagree with Sheriff
16 Lopey's interpretation of that Penal Code?

17 A It's not an interpretation when it's in plain
18 language. It's a misreading of it. It's a -- I don't
19 know -- I don't know what his thought process was, but
20 it clearly says that, so it can't be open to
21 interpretation when it's plain language.

22 Q Did you follow up with Sheriff Lopey to
23 indicate that you believe he misread Penal Code Section
24 26150(b)(2)?

25 A Yes, I believe I did verbally some months

1 later.

2 Q And how did he respond?

3 A He did not answer my question directly. He
4 changed the subject.

5 Q Did you make any other attempts to try to
6 convince the Siskiyou County sheriff department that
7 they were reading this Penal Code provision, again,
8 Penal Code Section 26150(b)(2), in error?

9 A Yes, I did. I sued the State of California to
10 restore my Second Amendment guarantees.

11 Q I'm not asking you to reread this letter, we
12 can all see it, but what is the gist of the rest of the
13 letter, Sheriff Lopey's thinking, as you understand it
14 to be, on why he would not issue an open carry license
15 to you?

16 A Well, I don't know what his motivation was to
17 not issue the license other than what he said above in
18 the letter. I was at the time a reserve deputy on the
19 marijuana interdiction team, and he states the obvious,
20 that I can carry off duty with government permission,
21 and when I'm wearing my badge, as any other law
22 enforcement officer has the ability, I could wear the
23 gun openly.

24 But as a reserve officer, you do not wear your
25 badge nor open carry any time you're not specifically

From: Amy L. Bellantoni [REDACTED]
Sent: Tuesday, August 31, 2021 9:40 AM
To: Matthew Wise
Subject: FW: OPEN CARRY PERMIT ISSUE. Siskiyou Sheriff response

----- Forwarded Message -----

From: Jon Lopey [REDACTED]
To: [REDACTED]
Cc: Karl Houtman [REDACTED]
Sent: Thu, 06 Sep 2018 19:08:10 -0400 (EDT)
Subject: OPEN CARRY PERMIT ISSUE

Mark:

Greetings – I hope all is well with you and your family. I hope you are getting some rest from the many fire mitigation efforts on-going in our state. We have really been hit hard this year.

I reviewed your proposal about the open carry issue and realize you submitted a request for an open carry permit.

After carefully analyzing the totality of this situation and your request, I have developed the following thoughts on this issue.

- While I agree the Hawaii decision does call into question the legality of California’s open carry law, according to the legal counsel for CPOA and CSSA, this case does not currently impact California’s ability to enforce the current law.
- 26150 (b) (2) PC does not give a sheriff or other law enforcement administrator authority to issue such a permit. As you know, we are tasked with enforcing the law and not creating new laws that may or may not stand legal challenges in the future.
- As you sheriff-coroner and as your law enforcement administrator, I consider you a member of the Department as a reserve deputy. Although you are on a “leave of absence” to address the issues you are pursuing through the courts, you are still a peace officer in good standing with the Department, but merely on a leave of absence. I believe there is a conflict of interest with me as a department head since your status makes you one of this Department’s employees. I think this factor could create problems later on, even if the enforcement of this provision (open carry) was brought to the court and appellate court levels.
- I believe the best way to pursue this issue in our county is to convince the Board of Supervisors to pass a resolution in support of the 2nd Amendment, since they formulate rules, regulations, and ordinances and as you know, formulate resolutions for a variety of important causes or reasons.
- Since you are a reserve deputy, my understanding of federal law (HR 218, etc.) is that while you are in good standing as a part-time peace officer and currently working, you are authorized to carry a concealed firearm off-duty and I know of no authority for you, as a peace officer, to carry a handgun in an open carry mode while not engaged in your duties in areas where such an act was prohibited. As you know, there are lands and areas in our county within

which open carry is legal. If I authorized you to carry a weapon in the open carry configuration while you are off-duty I would be violating our policy pertaining to carrying of handguns off-duty.

- I also feel that one of the reasons we had the ill-conceived concealed carry laws enacted in California was the fact we had citizens carrying openly in areas they knew would garner disdain and an emotional reaction from the populace (e.g., San Francisco, etc.). While I am a staunch supporter of the 2nd Amendment I think it is important to realize that California is not like a lot of other states and the exercise of our rights should be judicious and practiced with common sense.
- Right now, Siskiyou County and our Department are grappling with many challenges, including fiscal shortfalls, recruitment, retention, personnel shortages, rising costs for PERS and medical, and many, many other challenges. As an executive board member on CPOA and my participation in other groups regularly (e.g., CSSA, FBINAA, CNOA, etc.) puts me in a good position to advocate for the 2nd Amendment and to push back on bad laws. We are also opposing bad laws such as the AB 931 “use of force” bill, which was at least temporarily successful. While I applaud your dedication to freedom and the 2nd Amendment, without going through the Board of Supervisors and more importantly, our legislators, and by supporting organizations like the NRA and CRPA, and advocating amendments or sweeping changes to laws like the concealed carry prohibitions, your efforts would likely be counter-productive and focus unwanted attention on the county and potentially cost us litigation fees we do not have, especially if our Department was directly involved in the permit issue. I have no doubt the current Attorney General will at least consider using us as the “poster child” for his office’s anti-gun efforts and if he sued the Trump administration 32 times I don’t think he would mind suing our county once.
- As you can see, my greatest concerns surround your affiliation with the Department and the enforcement of our own policies and procedures.

Thanks – Please feel free to contact me if you have a question.

Jon

Jon E. Lopey, Sheriff-Coroner
Siskiyou County Sheriff’s Office
305 Butte Street
Yreka, CA 96097
(530) 842-8300

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EXHIBIT 7

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF CALIFORNIA

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MARK BAIRD and RICHARD
GALLARDO,

Plaintiffs,

vs.

No. 2:19-cv-00617-KJM-AC

ROB BONTA, in his official
capacity as Attorney General
of the State of California,
and DOES 1-10,
Defendants.

/

VIDEOCONFERENCE DEPOSITION OF RICHARD GALLARDO
August 31, 2021

Stenographically Reported by:
Janice L. Belcher, CSR No. 12342
Job No. 4782562
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1 VIDEOCONFERENCE DEPOSITION OF RICHARD GALLARDO

2
3 BE IT REMEMBERED, that pursuant to Notice, and on
4 the 31st day of August, 2021, commencing at the hour of
5 10:04 a.m., Pacific Standard Time, via videoconference
6 before me, JANICE L. BELCHER, a Certified Shorthand
7 Reporter, appeared RICHARD GALLARDO, produced as a
8 witness in said action, and being by me first duly
9 sworn, was thereupon examined as a witness in said
10 cause.

11 ---oOo---

12
13 APPEARANCES VIA VIDEOCONFERENCE:

14 For Plaintiffs:

15 AMY BELLANTONI
Bellantoni Law Firm
16 2 Overhill Road, Suite 400
Scarsdale, New York 10583
17 (914)367-0090
info@bellantoni-law.com

18
19 For Defendant Attorney General Rob Bonta:

20 R. MATTHEW WISE
Deputy Attorney General
21 1300 I Street, Suite 125
P.O. Box 944255
22 Sacramento, California 94244
(916)210-6046
23 matthew.wise@doj.ca.gov

24 Also Present:

25 MARK BAIRD

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RICHARD GALLARDO,
sworn as a witness,
testified as follows:

EXAMINATION

BY MR. WISE:

Q Good morning. My name is Matthew Wise, and I represent the California Attorney General in this case, which is Baird vs. Bonta.

Would you state your full name and spell your last name for the record.

A Richard Jason Gallardo; last name G-A-L-L-A-R-D-O.

Q Do you understand that you're testifying here today under the same oath that you would take if you were testifying in a courtroom?

A Yes.

Q Have you ever had your deposition taken?

A I've had it done a couple of times, yes.

Q Are you familiar with the rules of taking a deposition?

A Vaguely. It's been a while.

Q When was the last time you were deposed, approximately?

A Oh wow. It's been so long ago, I don't

1 carrying firearms, so I don't want to make an
2 assumption. Can I ask you if your question refers to
3 carrying outside of your home?

4 Q Sure. That's fine. Let me rephrase my
5 question, so: What is your understanding of Shasta
6 County's policy on carrying firearms as opposed to just
7 possessing firearms?

8 A Well, the policy is relating to carrying
9 outside the home, and that would be via the concealed
10 weapons permit process, the application process. It's
11 all spelled out on their website, so I'm not going to go
12 over it here. We can all read that later, if you have
13 not already.

14 So their process is very detailed on how to
15 apply and be granted that permit.

16 Q Does Shasta County, specifically the Shasta
17 County sheriff, issue licenses to carry a firearm
18 concealed?

19 A Yes, they have a concealed weapons permit
20 process.

21 Q As far as you understand, is the Shasta County
22 sheriff permitted by state law to issue licenses to
23 carry firearms openly?

24 A As far as I'm aware, there is a Penal Code
25 section that allows the issuance of an open carry permit

1 if the county has under 200,000 population. That's my
2 understanding of that Penal Code.

3 Q As you understand it, does Shasta County
4 qualify for that provision based on its population size?

5 A Your audio cut out before "qualified." Can you
6 repeat.

7 Q Of course. Does Shasta County have less than
8 200,000 people?

9 A Yes. Approximately 180,000.

10 Q So would that Penal Code provision that you
11 just mentioned apply in Shasta County allowing the
12 county to issue open carry licenses?

13 A That's my understanding. We meet that, that
14 section of that law.

15 Q As far as you know, does the Shasta County
16 sheriff issue open carry licenses?

17 A As far as I know, I don't believe he does. I
18 personally was denied such a request.

19 Q Do you know why the Shasta County sheriff does
20 not issue open carry licenses?

21 A I don't. I do not know why. We would have to
22 ask the sheriff at the time. We have a different
23 sheriff now. We would have to ask the sheriff at the
24 time why they did not do that.

25 Q Let's just get into that for a moment. So when