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# Constitutional Law—Shooting Blanks: Smart Gun Mandates and their Concomitant Constitutional, Regulatory, Public Policy, and Practical Issues

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CONSTITUTIONAL LAW—SHOOTING BLANKS: SMART GUN MANDATES AND THEIR CONCOMITANT CONSTITUTIONAL, REGULATORY, PUBLIC POLICY, AND PRACTICAL ISSUES

I. INTRODUCTION

The clamor for and against increased gun control in the wake of high-profile shootings has become a cliché. Gun control proponents are quick to call for increased background checks, assault weapons bans, and the like,<sup>1</sup> while gun control opponents are just as quick to point out that the proposed gun control would have been ineffective in preventing the latest tragedy.<sup>2</sup> As

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1. See generally, The Editorial Board, *As Congress Sleeps, More People Die*, N.Y. TIMES, (May 27, 2014), available at <http://www.nytimes.com/2014/05/28/opinion/as-congress-sleeps-more-people-die.html> (excoriating, in the wake of the Isla Vista shooting, Congress's failure to pass increased background check measures or further limit those allowed to possess firearms); Jonathan Topaz, *Feinstein Links LAX to Gun Control*, POLITICO, (Nov. 3, 2013, 11:01 AM) <http://www.politico.com/blogs/politico-live/2013/11/feinstein-links-lax-to-gun-control-176578.html> (Sen. Dianne Feinstein's assertion that the shooting at the Los Angeles International Airport underscores the need for increased gun control legislation); Mark Landler & Peter Baker, *'These Tragedies Must End,' Obama Says*, N.Y. TIMES, (Dec. 17, 2012), available at <http://www.nytimes.com/2012/12/17/us/politics/bloomberg-urges-obama-to-take-action-on-gun-control.html> (mentioning gun control proposals following the Sandy Hook shooting); Andrew Rosenthal, *Taking Note: A Gun for Every Person*, N.Y. TIMES, <http://takingnote.blogs.nytimes.com/2012/07/23/a-gun-for-every-person/> (July 23, 2012, 5:01 PM) (calling for increased gun control following the Aurora, Co. theater shooting); *Bloodshed and Invective in Arizona*, N.Y. TIMES, (Jan. 9, 2011), available at <http://www.nytimes.com/2011/01/10/opinion/10mon1.html> (criticizing Arizona's gun laws as "lenient" and calling for more stringent gun control following the Tuscon shooting in which six died and thirteen were wounded, including Rep. Gabrielle Giffords).

2. See, e.g., *Nation's Strongest Gun Laws Didn't Stop Rodger*, INVESTORS.COM (May 27, 2014, 7:01 PM), <http://news.investors.com/ibd-editorials/052714-702335-elliott-rodger-not-stopped-by-gun-control.htm> (highlighting the spate of gun control laws passed following the Sandy Hook shooting, and noting that the shooter complied with both state and federal laws in acquiring his firearms and magazines); Nick Gillespie, *Now is Not the Time for New Gun Laws*, DAILY BEAST (Sept. 18, 2013, 3:10 PM), <http://www.thedailybeast.com/articles/2013/09/18/now-is-not-the-time-for-new-gun-laws.html> (emphasizing that despite increased calls for gun control in the wake of mass shootings, mass shootings are not increasing, and violent and gun-related crime is decreasing); Gene Healy, *New Gun Laws Won't Prevent Another Sandy Hook*, REASON.COM (Apr. 16, 2013), <http://reason.com/archives/2013/04/16/new-gun-laws-wont-prevent-another-sandy> (noting that neither the National Academy of Sciences nor the Centers for Disease Control could identify any regulation that meaningfully reduced gun violence); Richard A. Epstein, *Will Banning Guns Prevent Another Aurora?*, DEFINING IDEAS (July 24, 2012), <http://www.hoover.org/research/will-banning-guns-prevent-another-aurora> (noting the soundness of economic analysis supporting research suggesting that stronger gun control laws correlate to increases in mass killings); Brian Doherty, *Gun Control Wouldn't Have Stopped Loughner*, REASON.COM (Jan. 21, 2011),

technology marches on, a new avenue for zealous gun control proponents has taken shape—instead of banning popular firearms, some gun control proponents have begun proposing biometric security mandates.<sup>3</sup> These mandates would require guns to be fitted with security technology that prevents their use—if handled by an unauthorized user.<sup>4</sup> Unlike some proposed gun control mechanisms,<sup>5</sup> biometric security—“smart gun”—technology could prevent those tragic shootings in which the shooter acquires his or her firearms by stealing them from the lawful owner<sup>6</sup> or a child accidentally shoots a playmate with an adult relative’s firearm.<sup>7</sup> Such mandates have been enacted in New Jersey,<sup>8</sup> and Senator Ed Markey of Massachusetts has pro-

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<http://reason.com/archives/2011/01/21/gun-control-wouldnt-have-stopp> (examining changes in public attitudes towards gun control, and noting that proposed gun control solutions would not have prevented Loughner’s shooting).

3. Joe Nocera, *The Gun Report*, N.Y. TIMES (Oct. 17, 2013, 1:23 PM), <http://nocera.blogs.nytimes.com/2013/10/17/the-gun-report-october-17-2013> (highlighting that New Jersey could be first state in the country to pass a law requiring guns sold in-state to be fitted with security devices that permit only the owner to fire them); see also *Don’t Jump Gun on Smart Guns*, DAILY RECORD, [archive.dailyrecord.com/article/20131017/NJOPINION01/310170010/Don-t-jump-gun-smart-guns](http://archive.dailyrecord.com/article/20131017/NJOPINION01/310170010/Don-t-jump-gun-smart-guns) (suggesting that while New Jersey’s adoption of a smart gun mandate is laudable, the market and technology are not yet able to support it). New Jersey’s mandate specifies that six months after the production model of a personalized handgun has become available in New Jersey or any other state, “no other type of handgun shall be sold or offered for sale by any registered or licensed firearms dealer in this State.” N.J. STAT. ANN. §§ 2C:58 -2.2 to -2.3 (West 2005).

4. See Nocera, *supra* note 3.

5. See, e.g., INVESTORS.COM *supra* note 2.

6. See, e.g., Matt Apuzo & Pete Yost, *Connecticut Shooter Adam Lanza’s Guns Were Registered To Mother Nancy Lanza: Official*, HUFF POST CRIME (Dec. 15, 2012, 9:15 PM), [http://www.huffingtonpost.com/2012/12/15/connecticut-shooter-guns\\_n\\_2306913.html](http://www.huffingtonpost.com/2012/12/15/connecticut-shooter-guns_n_2306913.html) (detailing the weapons found at Sandy Hook after the shooting).

7. See, e.g., Tiffany Johnson, *8-Year-Old Boy Killed in Accidental Shooting in White County*, NEWSCHANNEL5.COM, <http://www.jrn.com/newschannel5/news/8-Year-Old-Boy-Killed-In-Accidental-Shooting-In-White-County-270750691.html> (last updated Aug. 11, 2014).

8. N.J. STAT. ANN. §§ 2C:58 -2.5(a) (West 2005) (“On and after the first day of the sixth month following the preparation and delivery of the list of personalized handguns which may be sold in the State . . . no person registered or licensed . . . as a manufacturer, wholesale dealer of firearms, retail dealer of firearms . . . shall transport into this State, expose for sale, possess with the intent of selling, assign or otherwise transfer any handgun unless it is a personalized handgun or an antique handgun.”). See also N.J. STAT. ANN. § 2C:58-2 a(5) (West 2005) (including in handgun retail requirements that after the personalized handgun mandate go into effect “the handgun [be] identified as a personalized handgun . . . [or] an antique handgun”). New Jersey defines a personalized handgun as one that “incorporates in its design, and as part of its original manufacture, technology which automatically limits its operational use and which cannot be readily deactivated, so that it may be fired only by an authorized or recognized user [emphasis added].” N.J. STAT. ANN. § 2C:39-1 dd (West 2005).

posed a similar requirement<sup>9</sup> that all handguns “manufactured or sold in, or imported into the United States incorporate such technology.”<sup>10</sup>

This note demonstrates that biometric security mandates—particularly fingerprint or palm-print security devices for handguns—regardless of their purported effectiveness, are of dubious legality, and given the difficulty of implementing such a mandate,<sup>11</sup> may best be consigned to science fiction.<sup>12</sup> Part II of this note delves into the backgrounds of handgun<sup>13</sup> and biometric<sup>14</sup> technology and details current Second Amendment<sup>15</sup> jurisprudence.<sup>16</sup> Part III of this note discusses constitutional issues involved with a smart gun mandate,<sup>17</sup> regulatory issues created by such a mandate,<sup>18</sup> public policy issues implicated by a smart gun mandate,<sup>19</sup> and practical issues with implementing a mandate.<sup>20</sup>

## II. BACKGROUND

“God made some men big and some men small, but Sam Colt made them all equal.”<sup>21</sup> Handgun technology has advanced at a moderate pace

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9. *Markey Announces New Legislation, Efforts to Combat Gun Violence*, U.S. SENATOR ED MARKEY OF MASS. (Feb. 19, 2014), <http://www.markey.senate.gov/news/press-releases/markey-announces-new-legislation-efforts-to-combat-gun-violence>.

10. Handgun Trigger Safety Act of 2014, S. 2068, 113th Cong.

11. Civilians in the United States own approximately 270 million firearms. Cambridge University Press, *SMALL ARMS SURVEY, SMALL ARMS SURVEY 2007: GUNS AND THE CITY 39* (2007). Though in the first half of the twentieth century the majority of firearms manufactured in the United States were long guns, by the 1980s handguns had expanded to approximately half of the civilian market. *Id.* at 63. As of 2009, Americans owned an estimated 114 million handguns. William J. Krouse, *Gun Control Legislation*, CONGRESSIONAL RESEARCH SERVICE, Nov. 14, 2012, available at <http://fas.org/spp/crs/misc/RL32842.pdf>.

12. See, e.g., *DREDD* (Lionsgate 2012) (featuring a handgun keyed to the user’s palm-print); *SKYFALL* (Columbia Pictures 2012) (arming James Bond with a fictional Walther PPK/S model equipped with a palm-print security device); *JUDGE DREDD* (Buena Vista Pictures 1995) (featuring a handgun keyed to the user’s palm-print that delivers an electric shock to unauthorized users); *LICENSE TO KILL* (MGM 1989) (featuring a “camera-gun” which will only fire after recognizing James Bond’s fingerprints on the grip).

13. See *infra* Part II.A.

14. See *infra* Part II.B.

15. U.S. CONST. amend. II (“A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed.”).

16. See *infra* Part II.C.

17. See *infra* Part III.A.

18. See *infra* Part III.B.

19. See *infra* Part III.C.

20. See *infra* Part III.D.

21. T.R. FEHRENBACH, *LONE STAR: A HISTORY OF TEXAS AND THE TEXANS 563–64* (De Capo Press 2000) (quoting a Texas proverb).

since Samuel Colt received his revolver patent in 1836.<sup>22</sup> This pace seems positively glacial when compared with the rate at which biometric technology has progressed from its almost contemporaneous roots.<sup>23</sup> Particularly in recent years, biometric identification and authorization has expanded from the use of fingerprints to the use of retinæ,<sup>24</sup> blood vessel patterns,<sup>25</sup> and DNA.<sup>26</sup>

Parts A and B of this section show how handgun technology remains largely mechanical and unsophisticated, particularly when compared with biometric identification technology. Part C focuses on federal Second Amendment jurisprudence; recent litigation has focused on overturning total bans on handgun ownership,<sup>27</sup> and relatively little has been said about the *types* of arms protected by the Second Amendment.<sup>28</sup>

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22. See Jessica MacNeil, *Samuel Colt Receives Patent for His Revolver, February 25, 1836*, EDN NETWORK (Feb. 25, 2013), <http://www.edn.com/electronics-blogs/edn-moments/4407683/Samuel-Colt-receives-patent-for-his-revolver--February-25--1836>.

23. Henry Faulds proposed using fingerprints to identify persons in crime scene investigations in an article published in 1880. U.S. DEP'T OF JUSTICE & NAT'L INST. OF JUSTICE, *THE FINGERPRINT SOURCEBOOK* 13–14 (National Institute of Justice 2012) [hereinafter *THE FINGERPRINT SOURCEBOOK*].

24. See, e.g., Robyn Moo-Young, Note, “Eyeing” the Future: Surviving the Criticisms of Biometric Authentication, 5 N.C. BANKING INST. 421, 423–24 (2001) (noting the use of retina scans in place of ATM pin numbers in some Japanese banks beginning in 1997). The possible use of retinæ for identification was recognized as far back as 1935. *Science: Eye Prints*, TIME MAGAZINE, Dec. 16, 1935, available at <http://content.time.com/time/magazine/article/0,9171,755453,00.html>.

25. See, e.g., *Biometric Device Uses Blood Vessels to Identify People*, BBC NEWS (Nov. 13, 2012), <http://www.bbc.co.uk/news/uk-england-hampshire-20316159> (describing a biometric security system that reads the pattern of blood vessels in the user’s finger).

26. See, e.g., Stephen Mayhew, *Pentagon to Test Rapid DNA Biometric Technology*, BIOMETRICUPDATE.COM (Oct. 17, 2012), <http://www.biometricupdate.com/201210/pentagon-to-test-rapid-dna-biometric-technology> (describing a quick DNA test machine the military hopes to use for rapid identification of casualties in the field).

27. See, e.g., *McDonald v. City of Chicago, Ill.*, 130 S. Ct. 3020 (2010) (invalidating Chicago’s ban on handgun ownership by incorporating the Second Amendment against the states under the Fourteenth Amendment); *District of Columbia v. Heller*, 554 U.S. 570 (2008) (invalidating Washington, D.C.’s blanket ban on handgun ownership under the Second Amendment).

28. *But see Heller*, 554 U.S. at 625–28 (interpreting precedent and the Second Amendment as protecting those arms in common use for lawful purposes); see also *United States v. Miller*, 307 U.S. 174, 178 (1939) (holding, in the absence of evidence to the contrary, that a short-barreled shotgun had no “reasonable relationship to the preservation or efficiency of a well regulated militia,” and so was not protected by the Second Amendment).

### A. Handgun Technology

Handguns have progressed slowly in the nearly one-hundred eighty years since Samuel Colt's received a patent for his revolver,<sup>29</sup> from the iconic revolvers of the 19th Century to John M. Browning's Model 1911 U.S. Army pistol<sup>30</sup> to modern polymer-framed handgun designs like Gaston Glock's line of Glock pistols.<sup>31</sup>

Mechanically, revolvers and semi-automatic pistols operate quite differently. Revolvers are handguns that feature a revolving cylinder that usually holds five or six rounds.<sup>32</sup> Pulling the trigger of a double-action revolver turns the cylinder, cocks the hammer, and fires the round.<sup>33</sup> After shooting the five or six rounds loaded into the cylinder, it must be swiveled to the side so that new cartridges may be loaded.<sup>34</sup> Semi-automatic pistols are more complex mechanically than revolvers—each time a round is fired, the spring in the magazine (usually a detachable box into which cartridges are loaded) pushes the next round into the chamber after the empty shell is ejected.<sup>35</sup> Reloading a semi-automatic handgun is much easier than reloading a handheld revolver—not only do the magazines generally hold many more rounds than the revolver's cylinder, but the shooter must merely eject the spent magazine and insert a fresh one.<sup>36</sup>

Despite their starkly different design aesthetics, Browning's 1911 and Glock's Glock 17 both function by the same semi-automatic principles.<sup>37</sup> This is all the more remarkable given the nearly three-quarters of a century that separated their development. That said, even the modern Glock is a complicated piece of machinery. Despite the complexity of the design, the very nature of a semi-automatic firearm requires it to withstand repeated explosions—one of the requirements the Austrian Army had for its service

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29. MacNeil, *supra* note 22. Prior to the revolver, handguns were either single-shot or featured multiple barrels. *Id.*

30. See PATRICK SWEENEY, 1911: THE FIRST HUNDRED YEARS 15–16 (Dan Shideler 2010) (discussing the longevity of Browning's pistol design, which was first adopted by the U.S. Army in 1911).

31. See, e.g., PAUL M. BARRETT, GLOCK: THE RISE OF AMERICA'S GUN 16–17 (1st ed. 2012) (highlighting the competition the Glock 17 pistol faced in its bid to become the Austrian Army's duty pistol in 1982).

32. *Id.* at 10.

33. *Id.*

34. *Id.*

35. *Id.*

36. *Id.*

37. The main mechanical difference between the two handguns is the safety. Most pistols feature mechanical safeties that must be disengaged so that they may be fired. BARRETT, *supra* note 31, at 11. The Glock 17, however, was instead equipped with a "trigger safety"—a device built directly into the trigger that must be depressed before the trigger could be pulled. *Id.* at 28.

pistol in the early 1980s was that it have no more than one failure per thousand rounds fired, and that it have a service life of 40,000 rounds.<sup>38</sup>

## B. Biometric Technology

Despite the proposed earlier use of fingerprint identification in criminal investigation,<sup>39</sup> only recently has technology enabled its real-time use as an authentication device.<sup>40</sup> Several different methods exist by which fingerprints may be scanned, including optical, capacitive, and thermal.<sup>41</sup>

Optical sensors take an image of the fingerprint.<sup>42</sup> Capacitive sensors build an image of the fingerprint based on the difference in electrical capacitance between the friction ridges on the finger and the air between those ridges.<sup>43</sup> Thermal scanners measure the difference in temperature over time as a finger is swept across the sensor in order to generate the image.<sup>44</sup>

These methods—as well as other similar security methods, such as radio-frequency identification<sup>45</sup> (RFID) chips<sup>46</sup> and watches<sup>47</sup>—require power sources. Until recent developments, many fingerprint scanners were bulki-

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38. *Id.* at 11.

39. THE FINGERPRINT SOURCEBOOK, *supra* note 23, at 13–14.

40. *See, e.g., iPhone 5s Features*, APPLE, <http://www.apple.com/iphone-5s/features/> (last visited Oct. 20, 2013) (introducing a fingerprint identity sensor as a method to lock and unlock the newest model of Apple's iPhone); Jack M. Germain, *IBM Introducing Fingerprint Reader into Laptop*, TECHNEWSWORLD (Oct. 4, 2004), <http://www.technewsworld.com/story/37017.html> (describing IBM's "first-of-its-kind biometric security subsystem).

41. NTSC SUBCOMMITTEE ON BIOMETRICS, *Fingerprint Recognition*, pg. 3, BIOMETRICS.GOV (Aug. 7 2006), <http://www.biometrics.gov/documents/fingerprintrec.pdf>.

42. *Id.*

43. *Id.* at 4.

44. *Id.*

45. After equipping an item with a radio-frequency identification transponder (which contains digital information about that item), the transponder's stored data is extracted with a reader. Reepal S. Delal, Note, *Chipping Away at the Constitution: The Increasing Use of RFID Chips Could Lead to an Erosion of Privacy Rights*, 86 B.U. L. REV. 485, 487–88 (2006). These chips are frequently used commercially to expedite supply chain response time. *Id.* at 488. The "E-Z Pass" system automatically pays tolls when a transponder-equipped car drives through a tollbooth—the car need not come to a complete stop, because the transponder-reader communication does not require line of sight. *Id.* at 490–91.

46. *See, e.g., Cynthia Leonardatos et al., Smart Guns/Foolish Legislators: Finding the Right Public Safety Laws, and Avoiding the Wrong Ones*, 34 CONN. L. REV. 157, 182–84 (2001) (discussing problems inherent in using an RFID chip as a firearm security device, including the necessity of a power source, the requirement that the user wear some object in which the firearm's paired RFID chip is implanted, and the possibility that other radio-wave-emitting-devices might interfere with the firearm's operation).

47. *See, e.g., Nocera, supra* note 3 (discussing a firearm that may only be fired when the shooter is wearing a special watch that is paired to that firearm).

er;<sup>48</sup> now, they are incorporated into smart phones.<sup>49</sup> Other non-fingerprint- or palm-print-based biometric security approaches would be inconvenient if used in the firearm context, given current technology:<sup>50</sup> retina scanners are self-evidently impractical;<sup>51</sup> voiceprint matching would require the user to speak in order to use the firearm, and could fail if stress or other environmental factors prevent the user's voice from matching the reference sample;<sup>52</sup> and even the modern "fast" DNA biometrics can take up to ninety minutes to provide results—far too long to wait in an emergency.<sup>53</sup> For firearm security, fingerprinting, or palm-print scanning is the only conceivable practical biometric security approach based on current technology.

### C. Second Amendment Jurisprudence

The Supreme Court's treatment of the Second Amendment, rather than progressing at the relatively quick pace of advances in biotechnology, has moved along instead at the much slower rate of change of handgun technology. Prior to *United States v. Miller*,<sup>54</sup> the Supreme Court had addressed in its Second Amendment jurisprudence whether the Amendment applied to the states.<sup>55</sup> Though the Court held that the Amendment only prohibited infringement by Congress, these cases were decided before the doctrine of selective incorporation was implemented.<sup>56</sup> With *Miller*, the Court squarely addressed the *type* of arm protected by the Amendment, and held that only those weapons related to the efficiency or preservation of the well-regulated militia fell under the Amendment's ambit.<sup>57</sup>

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48. See, e.g., Jennifer Sullivan, *Portable Fingerprint Scanners Aid King County deputies*, SEATTLE TIMES (Oct. 18, 2012, 6:25 PM), [http://seattletimes.com/html/localnews/2019468300\\_fingerprints19m.html](http://seattletimes.com/html/localnews/2019468300_fingerprints19m.html) (describing smart-phone-sized portable fingerprint scanners in use by local deputies).

49. See, e.g., APPLE, *supra* note 40.

50. See Leonardatos, *supra* note 46, at 186.

51. John Trader, *Iris Recognition vs. Retina Scanning – What are the Differences?*, M2SYS BLOG ON BIOMETRIC TECHNOLOGY (June 11, 2012), <http://blog.m2sys.com/biometric-hardware/iris-recognition-vs-retina-scanning-what-are-the-differences/> (last visited Oct. 15, 2014) (explaining that retina scans project a beam of infrared light through the pupil as the person looks through the eyepiece, and the amount of light reflected is measured).

52. *Id.*

53. See Mayhew, *supra* note 26.

54. 307 U.S. 174 (1939).

55. See *United States v. Cruikshank*, 92 U.S. 542, 553 (1875) (limiting the Second Amendment's protection against infringement to infringement by Congress and not the states). See also *Presser v. Illinois*, 116 U.S. 252, 265 (1886) (restating *Cruikshank*'s holding that "shall not be infringed" limits only Congress), and *Miller v. Texas*, 153 U.S. 535, 538 (1894) (citing *Cruikshank* and stating again that the Second Amendment's language prohibits only federal action).

56. See *McDonald*, 130 S. Ct. at 3031.

57. *Miller*, 307 U.S. at 178.



The Court's holding in *Miller* remained the law of the land until *District of Columbia v. Heller*<sup>58</sup> in 2008, when the Court reinterpreted *Miller* in conjunction with the history of the Amendment<sup>59</sup> to hold that only those weapons "not typically possessed by law-abiding citizens for lawful purposes" are not protected by the Amendment<sup>60</sup>—that is, the weapons protected by the Amendment are those "in common use at the time."<sup>61</sup> The Court then incorporated this right against the states in *McDonald*<sup>62</sup> without further addressing the type of weapons protected.

Though the Second and Seventh Circuits have split on whether the Second Amendment similarly protects the right to *bear* arms,<sup>63</sup> they have not addressed the common-use requirement.<sup>64</sup> Other federal circuits have addressed it—in *Heller v. District of Columbia*,<sup>65</sup> the appellate court agreed with Mr. Heller that assault weapon and large-capacity magazines are indeed in "common use," but upheld a prohibition on their possession within the District under an intermediate scrutiny analysis;<sup>66</sup> in *United States v. Chester*,<sup>67</sup> that circuit upheld prohibitions on firearm possession by domestic violence misdemeanants, and emphasized that the "common use" be the common use for a "law-abiding, responsible citizen;"<sup>68</sup> in *United States v. Marzzarella*,<sup>69</sup> the court determined that firearms whose serial numbers had been destroyed were not protected under *Heller*'s "common use" litmus test;<sup>70</sup> and in *United States v. Fincher*,<sup>71</sup> the court held that machine guns are not in common use by law-abiding citizens and so are not protected by the Second Amendment.<sup>72</sup> The Supreme Court's "common use" requirement leaves much to be desired—it seemingly waffles between a quantitative as-

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58. 554 U.S. 570 (2008).

59. *Id.* at 625.

60. *Id.*

61. *Id.* at 627 (quoting *United States v. Miller*, 307 U.S. 174, 179 (1939)).

62. *McDonald*, 130 S. Ct. at 3031.

63. Compare *Moore v. Madigan*, 702 F.3d 933, 941 (7th Cir. 2012) (overturning Illinois's total ban on the carrying of firearms, whether open or concealed), with *Kachalsky v. County of Westchester*, 701 F.3d 81, 100 (2d Cir. 2012) (upholding New York's requirement that an applicant for a license to carry a concealed firearm show good and proper cause before such license is issued).

64. In his dissent in *Heller*, Justice Breyer took issue with this very requirement, noting that it defines the permitted arms based on the state of firearm regulation, and results in circular reasoning. *Heller*, 554 U.S. at 720–21 (Breyer J., dissenting).

65. 670 F.3d 1244 (D.C. Cir. 2011) [hereinafter *Heller II*].

66. *Id.* at 1261–64.

67. 628 F.3d 673 (4th Cir. 2010).

68. *Id.* at 682–83.

69. 614 F.3d 85 (3d Cir. 2010).

70. *Id.* at 99–101.

71. 538 F.3d 868 (8th Cir. 2008).

72. *Id.* at 874.

assessment and qualitative assessment of a firearm's use.<sup>73</sup> A narrow reading of the common use standard would be inconsistent with the Court's treatment of other constitutional rights.<sup>74</sup>

### III. ARGUMENT

The nature of handguns and their legal use along with the current state of biometric security technology severely limit any gun control approaches that mandate biometrically secured handguns. Would requiring all handgun owners to turn in their guns or fit them with fingerprint security devices be constitutional—or even practical? Who will ensure gun owners comply with this mandate? How will this mandate affect public policy?

Part A of this section examines constitutional issues involved with mandating smart guns. Part B discusses regulatory issues this mandate could create. Part C considers public policy issues implicated by this mandate. And Part D analyzes practical limitations on mandating smart guns.

#### A. Constitutional Issues Involved with Mandating Smart Guns

In *Heller*, the Court held that the Second Amendment protected common use of weapons for lawful purposes by the law-abiding citizen.<sup>75</sup> Though the D.C. Circuit declined to extend this protection to assault weapons in *Heller II*,<sup>76</sup> it focused on the nature of the use.<sup>77</sup> In *Heller*, the Supreme Court noted that the handgun had been chosen overwhelmingly by society for self-defense—the Second Amendment's "central" lawful purpose.<sup>78</sup> Banning such a class of arms, the Court noted, would fail constitutional muster regardless of the standard of scrutiny applied.<sup>79</sup>

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73. Andrew R. Gould, Comment, *The Hidden Second Amendment Framework Within District of Columbia v. Heller*, 62 VAND. L. REV. 1535, 1563–64 (2009) (noting that *Heller*'s language has no supporting statistics, implying that "common use" is a qualitative judgment, and similarly implying that regardless of whether handguns were statistically preferred for self-defense, or normatively preferred for self-defense, the handgun ban imposed by the District of Columbia would fail constitutional muster).

74. Nicholas J. Johnson, *The Second Amendment in the States and the Limits of the Common Use Standard*, 4 HARVARD L. & POL'Y REV. ONLINE, at 11, (Apr. 8, 2010), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1722955](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1722955) (noting additionally that the features which make firearms susceptible to gun bans are those very same features that make firearms useful for self-defense).

75. *Heller*, 554 U.S. at 625.

76. *Heller II*, 670 F.3d at 1261–64.

77. *Id.*

78. *Heller*, 554 U.S. at 628.

79. *Id.* at 628–29.

The handgun—the “quintessential self-defense weapon”<sup>80</sup>—may not be rendered unusable for self-defense by statute.<sup>81</sup> The Supreme Court invalidated the District of Columbia’s requirement that firearms in the home be rendered inoperable at all times.<sup>82</sup> Because an inoperable firearm would not be useable for the Second Amendment’s core purpose—self-defense—the District’s attempted regulation of firearms in the home was thus further preempted.<sup>83</sup>

At first blush, *Heller*’s “common use” test does not seem applicable. Smart guns and biometric security technology are nascent at best. A smart gun mandate, however, would require that only handguns equipped with biometric security measures be sold henceforth.<sup>84</sup> If possession of “dumb guns” were not simultaneously outlawed, the mandate’s effectiveness would be severely curtailed, given the estimated 114 million handguns owned by the public as of 2009.<sup>85</sup>

“Dumb guns” *are* in common use. The very nascent nature of biometric technology works against its mandate—under *Heller*’s “common use” language, it is not “dumb guns” which could be banned, but smart guns—they are at best in limited use, and because of the potentially inoperable aspect of

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80. *Id.* at 629.

81. *Id.* at 630.

82. *Id.*

83. *Id.*

84. New Jersey’s mandate, once it takes effect, allows only the sale of personalized handguns and antique handguns. N.J. STAT. ANN. § 2C:58-2 a(5) (West 2005). Antique firearms are those incapable of being fired or firing fixed ammunition (regardless of date of manufacture) or those manufactured before 1898 for which cartridge ammunition is not commercially available (if it is possessed as a curiosity, ornament, or for its historic value). N.J. STAT. ANN. § 2C:39-1 a (West 2005). Pre-mandate handgun owners in New Jersey are unaffected by the mandate. *Id.*

85. Firearms are durable goods—they are useful for long periods of time. *United States v. Goodwin*, 552 Fed. Appx. 541, 545 (6th Cir. 2014) (quoting *United States v. Pritchett*, 40 Fed. Appx. 901, 906 (6th Cir. 2002) (“Firearms are durable goods . . .”)); *United States v. Collins*, 61 F.3d 1379, 1384 (quoting *United States v. Singer*, 943 F.2d 758, 763 (7th Cir. 1991) (“[F]irearms, unlike drugs, are durable goods useful to their owners for long periods of time.”)). Any mandate that did not account for the more than 270 million privately owned firearms in the United States would be of limited effectiveness. See SMALL ARMS SURVEY, *supra* note 11, at 39. See also BLACK’S LAW DICTIONARY 809 (10th ed. 2014) (defining “durable goods” as “[c]onsumer goods that are designed to be used repeatedly over a long period”). See also Krouse, *supra* note 11. The United States firearm industry manufactured approximately five million handguns in 2012. *Firearms Commerce in the United States: Annual Statistical Update: 2014*, BUREAU OF ALCOHOL, TOBACCO, FIREARMS, & EXPLOSIVES, available at [http://www.atf.gov/sites/default/files/assets/statistics/CommerceReport/firearms\\_commerce\\_annual\\_statistical\\_report\\_2014.pdf](http://www.atf.gov/sites/default/files/assets/statistics/CommerceReport/firearms_commerce_annual_statistical_report_2014.pdf) (last visited Oct. 15, 2014). Even if the entire 2012 handgun manufacture output were sold in the domestic civilian market (and not exported or sold to the military or law enforcement), it would take nearly thirty five years of production and sale at that rate for smart guns to reach parity with conventional handguns. *Id.*

the technology.<sup>86</sup> Because smart guns are new and not widely adopted, it is conceivable that they—and any other experimental weapons technology that has yet to reach whatever critical mass is required to qualify as “common use”—could be banned under *Heller*’s common use test. Whether that test is quantitative—based on the extent to which society has adopted smart guns<sup>87</sup>—or qualitative—based on the perceived value to society of the banned dumb guns<sup>88</sup>—a smart gun mandate would not pass constitutional muster.

## B. Regulatory Issues Created by Mandating Smart Guns

Biotechnology regulation is incredibly complex.<sup>89</sup> Not only are multiple federal administrative agencies involved in its regulation, but the various state legislatures and state regulatory agencies can also involve themselves in the regulation of biotechnology.<sup>90</sup> These various agencies have chosen to operate their regulatory programs in a coordinated fashion.<sup>91</sup>

Mandating handgun biometric security measures, however, could upset this careful balance. Biotechnology is currently regulated by a pastiche of agencies, including the FDA, USDA, EPA, DOD, DOE, NIH, and BSCC<sup>92</sup>—bringing firearms into the mix would necessarily involve the Bureau of Alcohol, Tobacco, Firearms, and Explosives (BATFE).<sup>93</sup> The

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86. This note examines smart guns and biometric security mandates from a Second Amendment perspective. Other constitutional issues with a smart gun mandate and prohibition of “dumb guns” are readily apparent: under *Haynes v. United States*, 390 U.S. 85 (1968), the Supreme Court held that a mandatory registration scheme for otherwise outlawed weapons violated the accused’s Fifth Amendment right to be free from self-incrimination. *Id.* at 99–100; similarly, a mandatory collection of “dumb guns,” were it conducted without recompense, would violate the Fifth Amendment’s Takings Clause, U.S. CONST. amend. V.

87. See Gould, *supra* note 73, at 1563–64.

88. *Id.*

89. See, e.g., Mark Mansour et al., *Regulating Biotechnology: Science, Ethics, Law, and Governance Meet Head On in the Age of Informed Ignorance*, 21 TEMP. ENVTL. L. & TECH. J. 93, 96–97 (2003) (describing the roles of the Food and Drug Administration (FDA), the United States Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS), and the Environmental Protection Agency (EPA) in regulating biotechnology). See also Linda Maher, *The Environment and the Domestic Regulatory Framework for Biotechnology*, 8 J. ENVTL. L. & LITIG. 133, 139–64 (describing, in addition to the agencies listed by Mansour *supra*, the roles of the Biotechnology Science Coordinating Committee (BSCC), the National Institutes of Health (NIH), the Department of Defense (DOD), the National Science Foundation (NSF), and the Department of Energy (DOE)).

90. See, e.g., Maher, *supra* note 81, at 173–75.

91. See Coordinated Framework for Regulation of Biotechnology, 51 Fed. Reg. 23302, 23303 (June 26, 1986).

92. See Maher, *supra* note 81.

93. 28 U.S.C. § 599A(b)(1) (2006) (entrusting the BATFE with the investigation of criminal and regulatory violations of federal firearms laws).

BATFE is primarily concerned with licensing those who do business in the firearms industry.<sup>94</sup> Because *all* firearm manufacturers must be licensed by the BATFE, it follows that any manufacturer of a handgun with an *integral* biometric security device—whether that device is a fingerprint, blood, or DNA scanner—must also be so licensed.<sup>95</sup>

Aside from fingerprint or palm-prints, other biometric technologies may bring the BATFE's licensing scheme into conflict with the host of other agencies tasked with regulating biological technologies. This would further complicate an already muddled regulatory regime, and the addition of another regulatory hurdle could actually discourage the development of handgun biometric security systems.<sup>96</sup> Given the current state of biotechnology regulation, the only biometric security systems that the BATFE could conceivably implement without inter-agency coordination would be non-invasive biometric security systems such as fingerprint or palm-print scanners, retina scanners, or voiceprint scanners.

### C. Public Policy Issues Implicated by Mandating Smart Guns

The law, in its majestic equality, permits the poor as well as the rich to defend their homes with handguns.<sup>97</sup> And yet the poor have been the target of gun control in the past; President Clinton's policy of warrantless searches in Chicago housing projects was struck down as unconstitutional—a policy that had been implemented despite the fact that crime statistics showed that

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94. 18 U.S.C. § 923(a) (2006) (“No person shall engage in the business of importing, manufacturing, or dealing in firearms . . . until he has filed an application with and received a license to do so from the Attorney General.”).

95. The BATFE recommends that a gunsmith obtain a firearm manufacturer's license if he is creating or altering firearms, doing so as part of a regular business, and doing so in order to sell or distribute those firearms. *May a Person Engage in Gunsmithing under a Dealer's License (type 01), or Do Gunsmiths Need to Be Licensed as “Manufacturers” of Firearms?*, ATF.GOV, <https://www.atf.gov/content/may-person-engage-gunsmithing-under-dealer's-license-type-01-or-do-gunsmiths-need-be> (last visited Oct. 13, 2014). Because the New Jersey mandate requires personalized handguns incorporate security devices “*as part of the original manufacture*,” a manufacturer of handguns subject to the mandate would necessarily be licensed as a firearm manufacturer by the BATFE. N.J. STAT. ANN. § 2C:39-1 dd (West 2005).

96. See, e.g., Wes Siegner & Paul M. Hyman, *Medical Food Mumbo Jumbo: Confusing FDA Guidance Documents Will Discourage Medical Food Development*, FDA LAW BLOG, [http://www.fdalawblog.net/fda\\_law\\_blog\\_hyman\\_phelps/2013/09/medical-food-mumbo-jumbo-confusing-fda-guidance-documents-will-discourage-medical-food-development.html](http://www.fdalawblog.net/fda_law_blog_hyman_phelps/2013/09/medical-food-mumbo-jumbo-confusing-fda-guidance-documents-will-discourage-medical-food-development.html) (Sept. 18, 2013).

97. My apologies to Anatole France, author of *THE RED LILY* (1894), from whence this line has been modified.

*nonresidents* were responsible for the high crime rate.<sup>98</sup> A new Glock 17 handgun retails at a suggested price of \$599.99.<sup>99</sup> A similar polymer-framed handgun from Smith & Wesson, the M&P 9mm, is sold at a suggested retail price of \$569.99.<sup>100</sup> Budget polymer-framed handguns can be had for suggested retail prices as low as \$179.<sup>101</sup> For the poor, even a price just below \$200 might be too expensive. And yet the right of self-defense that lies at the core of the Second Amendment<sup>102</sup> is a right of all law-abiding citizens, not merely those affluent enough to afford the highest quality handguns. The core of this right is borne out in poll responses—sixty per cent of firearm owners own their guns for personal safety or protection.<sup>103</sup>

The addition of a biometric security device, whether of the fingerprint scanner type incorporated into the \$199 contract-laden iPhone 5s 16 GB model<sup>104</sup> or the \$2,000 portable DNA scanner in development for the government,<sup>105</sup> will increase the cost of any handgun in which it is incorporated.<sup>106</sup> For some, even a small increase in cost could price them out of ex-

98. Clayton E. Cramer, *The Racist Roots of Gun Control*, 4 KAN. J.L. & PUB. POL'Y 17, 22 (1995) (quoting Secretary of Housing and Urban Development Henry Cisneros's remarks in a Feb. 4, 1994 press conference).

99. See, e.g., *Glock G17 9mm High Capacity Pistol*, BASS PRO SHOPS, <http://www.basspro.com/GLOCK-G17-9mm-High-Capacity-Pistol/product/10218314/> (last visited Oct. 26, 2013); *Glock 17 Generation 4 Handgun*, GANDER MTN., <http://www.gandermountain.com/modperl/product/details.cgi?i=618746> (last visited Oct. 26, 2013).

100. *Smith & Wesson M&P 9mm – No Thumb Safety*, SMITH & WESSON, [http://www.smith-wesson.com/webapp/wcs/stores/servlet/Product4\\_750001\\_750051\\_769001\\_-1\\_757781\\_757781\\_ProductDisplayErrorView\\_Y](http://www.smith-wesson.com/webapp/wcs/stores/servlet/Product4_750001_750051_769001_-1_757781_757781_ProductDisplayErrorView_Y) (last visited Oct. 26, 2013).

101. *Handguns – 9mm*, HI-POINT FIREARMS, [http://www.hi-pointfirearms.com/hi-point-handguns/9MM\\_handguns.html](http://www.hi-pointfirearms.com/hi-point-handguns/9MM_handguns.html) (last visited Oct. 26, 2013).

102. *Heller*, 554 U.S. at 630.

103. Art Swift, *Personal Safety Top Reason Americans Own Guns Today*, GALLUP POLITICS (Oct. 28, 2013), <http://www.gallup.com/poll/165605/personal-safety-top-reason-americans-own-guns-today.aspx> (last visited Nov. 17, 2013).

104. See *Shop iPhone*, APPLE, <http://store.apple.com/us/buy-iphone/iphone5s> (last visited Oct. 26, 2013).

105. See Mayhew, *supra* note 26.

106. Kodiak Industries has patented an aftermarket fingerprint locking system for 1911 model handguns. *Intelligun*, KODIAK INDUSTRIES, <http://kodiakarms.com/product/intelligun/> (last visited Oct. 15, 2014). Its retail price is \$399. *Id.* This price is double the cost of the least expensive polymer-framed handguns discussed in the text accompanying notes 99–101, *supra*. A 1911-style handgun could cost, depending on quality, anywhere from \$453 to \$7,995. Compare *Rock Island 1911 Semi Auto Pistol .45 ACP 5" Barrel 8 Rounds Wood Grips Parkerized*, CHEAPER THAN DIRT, <http://www.cheaperthandirt.com/product/7-G51431> (last visited Oct. 15, 2014), to *Pinnacle Model*, WILSON COMBAT, <http://wilsoncombat.com/new/handgun-pinnacle.asp#.VD9Di77sCII> (last visited Oct. 15, 2014). On the inexpensive end, the *Intelligun* accessory essentially doubles the price of the handgun. The *Intelligun* system does not satisfy the New Jersey personalized handgun mandate's trigger requirements because not only is it not yet available, but as an aftermarket accessory, it is not incorporated into the design of the personalized handgun at its original manufacture. N.J. STAT. ANN. § 2C:39-1 dd (West 2005).

exercising the constitutionally guaranteed right to self-defense.<sup>107</sup> Given that approximately one-third of serious violent crime<sup>108</sup> victims in 2012 were near or below the poverty line,<sup>109</sup> a smart gun mandate could deny the section of the public that is most at risk of violent victimization<sup>110</sup> the means with which its members could defend themselves.

#### D. Practical Limitations That Hinder a Smart Gun Mandate

The very nature of handgun technology and biometric security technology constrains the ways in which they may be combined. A fingerprint or palm-print scanner would have to be implemented in the handgun's grip, where it would naturally align with the user's fingers and palm. The actual security interlock preventing operation of the firearm would also have to be included—in part in the grip, connected to the fingerprint or palm-print scanner, and in part in the action of the firearm, to prevent its functioning. Handgun grips, however, are not infinitely expandable—the design of modern semi-automatic firearms includes the magazine inside the grip,<sup>111</sup> which drastically limits the space available for biometric security systems. The grip must also remain narrow enough that it fits comfortably within the grasp of most people, lest the handgun cease to be so. The fingerprint scanner runs on battery power; this power further increases the materials that must be added to the handgun grip for the biometric security device to function. Al-

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107. *Heller*, 554 U.S. at 630.

108. Including rape, sexual assault, robbery, and aggravated assault.

109. *NCVS Victimization Analysis Tool*, BUREAU OF JUSTICE STATISTICS, <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=4292> (follow “NCVS Victimization Analysis Tool (Updated)” hyperlink; then click the “Custom Tables” tab; then click the “Personal Victimization” radio button; then click the “Select Victimization Type” button; then select “2012” in each drop-down menu under “Years;” then check the “Serious Violent Victimization” box; then choose “Household Income” in the “First Variable” drop-down menu; then click the “Generate Results” button; then click the “Percent” link) (last visited Oct. 27, 2013). Thirty-four point three per cent of victims were members of households with income of \$24,999 or less. *Id.* The Department of Health and Human Services poverty guidelines set the poverty guideline for the continental United States at \$23,550 for a family of four. Annual Update of the HHS Poverty Guidelines, 78 Fed. Reg. 5182 (Jan. 24, 2013).

110. Though thirty-four point three per cent of violent crime victims were members of households at or below the poverty line, the overall poverty rate in 2012 was fifteen per cent. *NCVS Victimization Analysis Tool*, *supra* note 102; Carmen DeNavas-Walt and Bernadette D. Proctor, *Income and Poverty in the United States: 2013*, UNITED STATES CENSUS BUREAU, at 12, Sept. 2014, available at <https://www.census.gov/content/dam/Census/library/publications/2014/demo/p60-249.pdf>.

111. See BARRETT, *supra* note 31, at 9.

so, the scanner must be shock-resistant to prevent the shock on firing from breaking the weapon.<sup>112</sup>

Now let us presume that a fingerprint scanner and its power source have been shoehorned into a handgun grip. Will the scanner recognize multiple people (i.e., family members), or will it be limited to one person?<sup>113</sup> How often will the battery need to be charged or replaced? Will the gun work if the battery is dead, or will it become an unwieldy metal and polymer bludgeon? A vital aspect of control theory is the idea of fail-safes.<sup>114</sup> If a device malfunctions, it should revert to a “safe” condition. But for a biometrically secured handgun, which condition is safe? Is reverting to an inoperable condition safe? This would prevent misuse of the handgun if it the gun were stolen, to be sure, but the core purpose of the Second Amendment is *self-defense*.<sup>115</sup> For a biometrically secured handgun to fail-safe, it could just as easily be argued that it must revert to the *operable* condition on failure of the security mechanism—this would allow the law-abiding owner to use the firearm for its core purpose despite the malfunction of the security device. Given *Heller*’s disapproval of requirements that weapons be kept inoperable in one’s own home,<sup>116</sup> a requirement that biometrically-equipped handguns revert to the inoperable condition would run afoul of the Second Amendment.<sup>117</sup> There is a chance that such a requirement would require the handgun be impossible for the owner to use it for self-defense—the “core lawful purpose” of the Amendment.<sup>118</sup>

Most importantly, what will happen if the scanner fails? Even current fingerprint scanning technology is not foolproof.<sup>119</sup> Biometric devices such

112. See generally, *Frequently Asked Questions*, BSA OPTICS, <http://www.bsaoptics.com/questions.aspx> (last visited Oct. 28, 2013) (noting that all of BSA’s scopes are shock-proof).

113. If it is limited to one person, this again implicates the public policy problems discussed in Part III.C. A family that is hard-pressed to purchase one handgun can hardly be expected to purchase a separate handgun for each adult so that no matter who is home, that person may defend himself.

114. NEW OXFORD AMERICAN DICTIONARY 608 (Elizabeth J. Jewell & Frank Abate eds., 2001) (defining “fail-safe” as “causing a piece of machinery to revert to a safe condition in the event of a breakdown or malfunction”). See also B. WAYNE BEQUETTE, PROCESS CONTROL: MODELING, DESIGN, AND SIMULATION 4 (2003) (“The concept of ‘fail-safe’ is always important in the selection of instrumentation. For example, a control valve needs an energy source to move the valve stem and change the flow . . . . If the valve is *air-to-open*, then the loss of instrument air will cause the valve to close; this is known as a *fail-closed* valve. If, on the other hand, a valve is *air-to-close*, when instrument air is lost the valve will go to its fully open state; this is known as a *fail-open* valve.”).

115. *Heller*, 554 U.S. at 630.

116. *Id.*

117. See generally, *id.*

118. *Id.*

119. See, e.g., Anthony Wing Kosner, *iPhone 5s Touch ID Fingerprint Scanner is a Fail for 20% of Users, Here’s What to Do*, FORBES (Oct. 15, 2013, 12:53 PM), <http://www.forbes>.



as fingerprint scanners can either allow access or deny access—they are binary systems. And yet, four possible results exist: (1) the scanner could correctly match the fingerprint with the reference (a true positive); (2) the scanner could *incorrectly* match the fingerprint with the reference (a false positive); (3) the scanner could correctly determine that the fingerprint does not match the reference (a true negative); or (4) the scanner could *incorrectly* determine that the fingerprint does not match the reference (a false negative).<sup>120</sup> If a smart gun owner uses his weapon against an aggressor without issue, or if the aggressor attempts to use the owner's gun against him or her, and in both cases the biometric security system functions as it should, then there is no problem.

In the case of false positives and false negatives, however, the smart gun owner should be concerned because a false positive would result in an unauthorized user successfully using the owner's gun against him or her. And, a false negative would result in the gun owner being unable to use his or her own gun against a home intruder. In either of these situations, the policy behind the smart gun mandate—to implement current technology into handgun design and thereby handgun owners and their families safer—would not have been successful. Only more sophisticated scanning and comparison software could minimize these occurrences—and more sophistication comes at a price that consumers must pay through increased prices, manufacturers must pay through increased complexity, and the government must pay through implementing complex regulatory schemes.

#### IV. CONCLUSION

As biometric security systems become cheaper, more widely available, and more accurate, it seems safe to predict that calls for gun control programs mandating smart guns will become more prevalent.<sup>121</sup> At its current

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com/sites/anthonykosner/2013/10/15/iphone-5s-touch-id-fingerprint-scanner-is-a-fail-for-20-of-users-heres-what-to-do/.

120. See R.S. Radford, *Statistical Error and Legal Error: Type One and Type II Errors and the Law*, 21 LOY. L.A. L. REV. 843, 851 (1988) (describing the categories of statistical error).

121. Even with the technology at its current level, such calls exist. See Nocera, *supra* note 3. See also Dave Guston & Ed Finn, *The Man with the Personalized Gun*, SLATE (Nov. 14, 2012, 4:41 PM), [http://www.slate.com/articles/technology/future\\_tense/2012/11/skyfall\\_someone\\_should\\_make\\_james\\_bond\\_s\\_biometric\\_walther\\_ppk\\_s\\_gun.html](http://www.slate.com/articles/technology/future_tense/2012/11/skyfall_someone_should_make_james_bond_s_biometric_walther_ppk_s_gun.html) (calling for adoption of the biometric scanning technology James Bond's handgun was equipped with in SKYFALL, *supra* note 7); Michael S. Rosenwald, *'We Need the iPhone of Guns': Will Smart Guns Transform the Gun Industry?*, WASH. POST. (Feb. 17, 2014), [http://www.washingtonpost.com/local/we-need-the-iphone-of-guns-will-smart-guns-transform-the-gun-industry/2014/02/17/6ebe76da-8f58-11e3-b227-12a45d109e03\\_story.html](http://www.washingtonpost.com/local/we-need-the-iphone-of-guns-will-smart-guns-transform-the-gun-industry/2014/02/17/6ebe76da-8f58-11e3-b227-12a45d109e03_story.html) (describing the Armatix iP1 as a “dream of gun-control advocates for decades”). Note that the availability of the Armatix iP1 in California triggers the New Jersey mandate. See Nocera, *supra* note 3.

level, however, this technology is not yet ripe for a mandate—it must first become cheaper, more reliable, and more energy-efficient. An inexpensive, robust biometric security system that could be accessed by multiple family members would alleviate many of the practical concerns raised by this note,<sup>122</sup> though the constitutional concerns would remain. Given the current state of biometric technology, such a system is likely several years down the road—*Heller*'s “common use” requirement, however, may prove too powerful a roadblock for any smart gun mandate to overcome.

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122. The “Intelligun” modification for 1911-style handguns addresses some of the concerns raised in this note; it uses a fingerprint-reading device that reportedly functions even through blood and sweat and has a failure rate of one in ten thousand. Frank Minitzer, *The Smart-Gun Maker Who Told Holder Off*, NATIONAL REVIEW ONLINE (Aug. 11, 2014, 4:00 AM), <http://www.nationalreview.com/article/385109/smart-gun-maker-who-told-holder-frank-miniter>. This modification, however, *only* fits 1911-style handguns, and in the event of a dead battery, only the police model fails to the unlocked condition—the civilian model must be manually unlocked with a key when the battery has died. *Id.* See also *supra* note 106.

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