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# *Heller* and Nonlethal Weapons

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*Two important opinions in the past decade, both written by Justice Antonin Scalia, have sought to apply originalist jurisprudence to constitutional issues raised by technologies that were unknown at the time of the founding. In *Kyllo v. United States*, the Court held that using sense-enhancing technology to obtain information about the interior of a home, even without a physical intrusion, constitutes a Fourth Amendment search, at least if the technology is not “in general public use.” This rule appropriately preserves the privacy that could only have been violated by a trespass in 1791. In *District of Columbia v. Heller*, the Court endorsed a superficially similar rule under which weapons are protected by the Second Amendment only if they are “in common use” today. This dictum disserves the purpose of the constitutional right to arms, for it allows the government to create Second Amendment exceptions almost at will, by preventing disfavored types of weaponry from remaining or coming into “common use.”*

*Heller’s dictum threatens to frustrate the right of civilians to possess new types of nonlethal weapons that may be superior to firearms for the constitutionally protected purpose of self defense. We propose that the Court repudiate this dictum, and adopt a different rule that is consistent with *Kyllo’s* sound approach to emerging technologies: Just as *Kyllo* adopted a presumption that the police may employ surveillance technologies that are in widespread use by civilians, so the courts should adopt a presumption that civilians may employ self-defense technologies that are in widespread use by the police.*

## Introduction

In the course of deciding that the District of Columbia’s handgun ban violated the Second Amendment, Justice Antonin Scalia’s majority opinion in *District of Columbia v. Heller* offered a remark about technological change:

Some have made the argument, bordering on the frivolous, that only those arms in existence in the 18th century are protected by the Second Amendment. We do not interpret constitutional rights that way. Just as the

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First Amendment protects modern forms of communications, *e.g.*, *Reno v. American Civil Liberties Union*, and the Fourth Amendment applies to modern forms of search, *e.g.*, *Kyllo v. United States*, the Second Amendment extends, *prima facie*, to all instruments that constitute bearable arms, even those that were not in existence at the time of the founding.<sup>1</sup>

Justice Scalia was charitable to say that this argument “border[s] on the frivolous.” If the “Arms” protected by the Second Amendment included only those that existed in the eighteenth century, logic would require that the “Armies” that Congress is authorized to raise can consist only of infantry marching on foot with antique black powder muskets and of cavalry mounted on horses. And the “Navy” that Congress is authorized to maintain would be a fleet of wooden sailing ships. This is all so silly that one wonders why the Court bothered even to mention it.

Justice Scalia’s citation of *Reno v. American Civil Liberties Union* deepens the mystery, for the Court in that case sensibly assumed without any comment at all that the Free Speech Clause applies to communications over the Internet.<sup>2</sup> *Kyllo v. United States*, however, shows that it is not always silly to wonder whether the Constitution applies to novel devices that were unknown at the time of the framing.<sup>3</sup> The Court (in an opinion written by Justice Scalia) concluded that a thermal-imaging device, which the police had used to detect heat being vented from a house containing what turned out to be an indoor marijuana garden, had effected a Fourth Amendment search of the home.<sup>4</sup> The passage from *Kyllo* specifically cited by Justice Scalia in *Heller*<sup>5</sup> insisted on articulating a doctrine that would prevent a central purpose of the Fourth Amendment—protecting the privacy of the home from government intrusion—from being undermined by advances in police surveillance technology:

The Government maintains, however, that the thermal imaging must be upheld because it detected “only heat radiating from the external surface of the house.” The dissent makes this its leading point, contending that there is a fundamental difference between what it calls “off-the-wall” observations and “through-the-wall surveillance.” But just as a thermal imager captures only heat emanating from a house, so also a powerful directional microphone picks up only sound emanating from a house—and a satellite capable of scanning from many miles away would pick up only visible light emanating from a house. We rejected such a mechanical interpretation of the Fourth Amendment in *Katz*, where the eavesdropping device picked up only sound waves that reached the exterior of the phone booth. Reversing that approach would leave the homeowner at the mercy of advancing technology—including imaging technology that could discern all human activity in the home. While the technology used in the present case was relatively crude, the rule we adopt must take account of more sophisticated

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1. 128 S. Ct. 2783, 2791–92 (2008) (citations omitted) (citing *Reno v. ACLU*, 521 U.S. 844, 849 (1997); *Kyllo v. United States*, 533 U.S. 27, 35–36 (2001)).

2. *Reno*, 521 U.S. at 849.

3. 533 U.S. 27 (2001).

4. *Id.* at 34.

5. *Heller*, 128 S. Ct. at 2791 (citing *Kyllo*, 533 U.S. at 35–36).

systems that are already in use or in development.<sup>6</sup>

Whether *Kyllo* was correctly decided on its facts or not,<sup>7</sup> the Court was certainly right to recognize that advances in technology should not allow the police to accomplish the same invasions of privacy that may not permissibly be accomplished using eighteenth-century methods, such as physical invasion. The same recognition should inform the Court's emerging new Second Amendment jurisprudence. *Heller* adopts an approach with a superficial resemblance to *Kyllo*'s. Ironically and unfortunately, however, it leads to an opposite substantive result. We propose an approach to the Second Amendment that is more truly consistent with *Kyllo*'s sound approach to the Fourth Amendment.

Part I of this Article suggests that *Heller* used a mechanical and insupportable version of *Kyllo*'s reasoning to justify legislative bans on weapons that are not currently in common civilian use. At the moment, this may not seem to be of much practical importance. The firearms most clearly deprived of Second Amendment protection—short-barreled shotguns and machine guns—would rarely be a great deal more useful for purposes of self-defense by civilians than conventional handguns, rifles, and shotguns. Emerging technologies, however, may lead legislatures to ban certain kinds of nonlethal weapons that would be substantially superior to firearms for personal self-defense, and to do so before those weapons come into common use. Part II sketches the current status and law of nonlethal weapons. Part III discusses possible nonlethal technologies of the relatively near future. Part IV tries to envision the regulatory environment that might develop to govern these emerging nonlethal technologies. Finally, in Part V, we argue that the difficulties suggested in the preceding section highlight inadequacies in *Heller* and, more generally, with a Second Amendment jurisprudence that draws a mechanical distinction between technologies that are and are not currently in public use. We conclude by proposing a Second Amendment test that is genuinely analogous to the Fourth Amendment test employed in *Kyllo*.

## I. KYLLO and HELLER

### A. KYLLO: Technologies “in General Public Use”

For a long time after the Bill of Rights was adopted, the Supreme Court took a narrowly historical approach in applying the Fourth Amendment. In *Olmstead v. United States*, for example, the Court held that the warrantless wiretap of a telephone was not a “search” within the meaning of the Constitution.<sup>8</sup> In so doing, Chief Justice William Taft's opinion limited the constitutional protection to the specific types of government searches known in 1791: “The well known historical purpose of the Fourth Amendment, directed

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6. *Kyllo*, 533 U.S. at 35–36 (citations omitted) (quoting Brief for the United States at 26, *Kyllo*, 533 U.S. 27 (No. 99-8508)).

7. We take no position on this issue.

8. 277 U.S. 438, 464 (1928).

against general warrants and writs of assistance, was to prevent the use of governmental force to search a man's house, his person, his papers and his effects; and to prevent their seizure against his will."<sup>9</sup>

In 1967, the Court emphatically rejected this approach in *Katz v. United States*.<sup>10</sup> Holding that a Fourth Amendment search had taken place when government agents eavesdropped through an electronic device attached to the outside of a public telephone booth, the Court said:

[T]he Fourth Amendment protects people, not places. What a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection. But what he seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected. . . . [A]lthough a closely divided Court supposed in *Olmstead* that surveillance without any trespass and without the seizure of any material object fell outside the ambit of the Constitution, we have since departed from the narrow view on which that decision rested.<sup>11</sup>

As Justice Scalia noted in *Kyllo*, the Court has read *Katz* to establish the test articulated in Justice John Marshall Harlan's concurrence: "[A] Fourth Amendment search occurs when the government violates a subjective expectation of privacy that society recognizes as reasonable."<sup>12</sup> Conceding that this test appears on its face to be circular, and that it may be difficult to refine when areas like telephone booths and automobiles are involved, Justice Scalia nonetheless contended that the thermal-imaging case before the Court could and should be decided on the basis of an historically grounded originalist analysis:<sup>13</sup>

[I]n the case of the search of the interior of homes—the prototypical and hence most commonly litigated area of protected privacy—there is a ready criterion, with roots deep in the common law, of the minimal expectation of privacy that *exists*, and that is acknowledged to be *reasonable*. To withdraw protection of this minimum expectation would be to permit police technology to erode the privacy guaranteed by the Fourth Amendment. We think that obtaining by sense-enhancing technology any information regarding the interior of the home that could not otherwise have been obtained without physical "intrusion into a constitutionally protected area," constitutes a search—at least where (as here) the technology in question is not in general public use. This assures preservation of that degree of privacy against government that existed when the Fourth Amendment was adopted.<sup>14</sup>

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9. *Id.* at 463.

10. 389 U.S. 347, 353 (1967) ("We conclude that the underpinnings of *Olmstead* and *Goldman* have been so eroded by our subsequent decisions that the 'trespass' doctrine there enunciated can no longer be regarded as controlling.").

11. *Id.* at 351–53 (citations omitted).

12. *Kyllo v. United States*, 533 U.S. 27, 33 (2001) (citing *Katz*, 389 U.S. at 361 (Harlan, J., concurring)).

13. As David Sklansky has shown, *Kyllo* represents the culmination of a campaign by Justice Scalia to reestablish Fourth Amendment law on the basis of its original meaning without returning to *Olmstead*'s narrow historical approach. See generally David A. Sklansky, *The Fourth Amendment and Common Law*, 100 Colum. L. Rev. 1739 (2000).

14. *Kyllo*, 533 U.S. at 34 (citation omitted) (quoting *Silverman v. United States*, 365 U.S. 505, 512

Justice John Paul Stevens' dissent pointed out that "the contours of [the Court's] new rule are uncertain because its protection apparently dissipates as soon as the relevant technology is 'in general public use.'"<sup>15</sup> Justice Scalia dodged the objection by appealing to precedent, which suggests that he had no better response.<sup>16</sup> But it would not have been very hard to articulate a rationale for considering whether a given technology is in general public use. *Katz* sensibly concluded that "[w]hat a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection,"<sup>17</sup> and a later case added that "[t]he Fourth Amendment protection of the home has never been extended to require law enforcement officers to shield their eyes when passing by a home on public thoroughfares."<sup>18</sup> There is no apparent reason to prevent the police from making observations that other members of the public may and do commonly make, for none of us can have a reasonable expectation of privacy in what we have knowingly exposed to the public.

Accordingly, if a particular surveillance technology—like thermal-imaging devices—is not in general public use, people have a reasonable expectation that their fellow citizens are not using it to observe them. Similarly, if legislatures make it unlawful for certain technologies—like electronic eavesdropping devices—to be used by civilians for surveillance, people will have a reasonable expectation that they are not being observed by such devices. The important point here is that we can get a fairly good idea about what people reasonably expect from objective indicia that operate independently of what courts or other elements of the government think the government *should* be permitted to do.<sup>19</sup> The Fourth Amendment issue can then be resolved without draining the constitutional provision of effect, which is what would happen if the government were allowed to create special rules allowing itself free use of technologies that citizens have good reason to expect are not being used by other civilians.

Although this approach to the Fourth Amendment may not neatly solve all of the specific questions that might arise, we do think that it offers a plausible defense of Justice Scalia's approach in *Kyllo* against the objection raised in Justice Stevens' dissent. Fourth Amendment protection against the government arguably should dissipate once a surveillance technology comes into general use by the public because of the commonsensical notion that the government should be permitted to observe what everybody else can observe. And when technologies emerge that allow the public to invade our privacy, and we outlaw

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(1961).

15. *Id.* at 47 (Stevens, J., dissenting) (citation omitted).

16. *Id.* at 39–40 n.6 (majority opinion).

17. 389 U.S. at 351.

18. *California v. Ciraolo*, 476 U.S. 207, 213 (1986).

19. Where there is a statutory prohibition on the use of certain surveillance technologies by the government without a warrant, it would follow that a violation of the statute constitutes a Fourth Amendment search.

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the use of those technologies by the public, it is logical to subject the use of those technologies by the government to Fourth Amendment limitations.

B. *HELLER*: Weapons “in Common Use at the Time” versus “Dangerous and Unusual Weapons”

In *Heller*, Justice Scalia began with a lengthy historical analysis showing that the Second Amendment protects a private, individual right to keep and bear arms for the purpose of self-defense against criminal violence.<sup>20</sup> When he turned to the handgun ban at issue in the case before the Court, however, Justice Scalia abandoned this historical approach and simply announced that the ban is unconstitutional because handguns are commonly used for self-defense today:

The handgun ban amounts to a prohibition of an entire class of “arms” that is overwhelmingly chosen by American society for [the] lawful purpose [of self-defense]. The prohibition extends, moreover, to the home, where the need for defense of self, family, and property is most acute. Under any of the standards of scrutiny that we have applied to enumerated constitutional rights, banning from the home “the most preferred firearm in the nation to ‘keep’ and use for protection of one’s home and family,” would fail constitutional muster.

....

It is no answer to say, as petitioners do, that it is permissible to ban the possession of handguns so long as the possession of other firearms (*i.e.*, long guns) is allowed. It is enough to note, as we have observed, that the American people have considered the handgun to be the quintessential self-defense weapon. There are many reasons that a citizen may prefer a handgun for home defense: It is easier to store in a location that is readily accessible in an emergency; it cannot easily be redirected or wrestled away by an attacker; it is easier to use for those without the upper-body strength to lift and aim a long gun; it can be pointed at a burglar with one hand while the other hand dials the police. Whatever the reason, handguns are the most popular weapon chosen by Americans for self-defense in the home, and a complete prohibition of their use is invalid.<sup>21</sup>

The *Heller* opinion also included dicta endorsing legislative bans on weapons that are “dangerous and unusual,” a category that appears to include all weapons that are not in common use by civilians today.<sup>22</sup> As examples of weapons that are not in common use today, and therefore not protected by the Second Amendment, Justice Scalia mentioned short-barreled shotguns and probably also machine guns: “We therefore read *Miller* to say only that the Second Amendment does not protect those weapons not typically possessed by law-abiding citizens for lawful purposes, such as short-barreled shotguns. That accords with the historical understanding of the scope of the right, see Part III,

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20. *District of Columbia v. Heller*, 128 S. Ct. 2783, 2788–2808 (2008).

21. *Id.* at 2817–18 (footnote omitted) (citation omitted) (quoting *Parker v. District of Columbia*, 478 F.3d 370, 400 (D.C. Cir. 2007)).

22. *Id.* at 2815–16.

*infra.*”<sup>23</sup> This conclusion is not supported by the cited precedent or by the historical sources discussed in Part III of the *Heller* opinion.<sup>24</sup> The effects are also perverse. Under this rule, short-barreled shotguns and machine guns are per se excluded from protection by the Second Amendment. Why? Because they are not “typically possessed by law-abiding citizens for lawful purposes” today.<sup>25</sup> But *Congress* assured that this test could not be met by adopting oppressive tax and regulatory burdens, beginning with the National Firearms Act of 1934,<sup>26</sup> that guaranteed they would not be in common use. If Congress had not done this, maybe they would have become unpopular for other reasons. We may never know for sure, but what we do know is that Justice Scalia’s test empowers Congress to create its own exceptions to the Second Amendment so long as the Supreme Court waits awhile before it checks to see whether particular weapons are in common civilian use.

Suppose, for example, that the federal handgun ban imposed in the District of Columbia in 1976<sup>27</sup> had been applied by Congress to the entire nation that same year. If a case challenging the ban had not reached the Supreme Court until 2008, it would presumably have been upheld under the test that Justice Scalia invented in order to justify bans on machine guns and short-barreled shotguns.<sup>28</sup>

Alternatively, suppose Congress decides now or in the future to adopt “laws imposing conditions and qualifications on the commercial sale”<sup>29</sup> of handguns, perhaps along the lines of the conditions and qualifications that have been used to suppress the market for short-barreled shotguns and machine guns. Given the large number of handguns already owned by civilians, it might take some time for handguns to become as rare as machine guns or short-barreled shotguns. But the government could presumably accelerate that process by purchasing handguns from their current owners, especially if onerous regulatory burdens were placed on those who were reluctant to sell. The holding in *Heller* would thereby be overturned, for a handgun ban would no longer be an unconstitutional law that “amounts to a prohibition of an entire class of ‘arms’ that is overwhelmingly chosen by American society for [the] lawful purpose [of self-defense].”<sup>30</sup>

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23. *Id.* at 2815–16; *see also id.* at 2815 (apparently assuming that machine guns are outside the protection of the Second Amendment).

24. For a detailed analysis, see Nelson Lund, *The Second Amendment, Heller, and Originalist Jurisprudence*, 56 UCLA L. Rev. (forthcoming June 2009), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1324757](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1324757).

25. *Heller*, 128 S. Ct. at 2816.

26. National Firearms Act, ch. 757, 48 Stat. 1236 (1934) (codified as amended at 26 U.S.C. §§ 5801–5872 (2006)).

27. *See* D.C. Stat. Ann. §§ 7-2501.01, 7-2502 (2001).

28. That result would also have been supported by Justice Scalia’s use of the term “longstanding” to characterize felon-in-possession laws that did not exist until 1968. *See Heller*, 128 S. Ct. at 2816–17.

29. *Heller*, 128 S. Ct. at 2817 (endorsing, in dicta, such restrictions).

30. *Id.*

Thus, the approach taken in *Heller* really is vulnerable to the kind of objection that Justice Stevens made in *Kyllo*.<sup>31</sup> Unlike *Kyllo*'s sensible effort to find an objective way to determine whether a constitutional claimant had a reasonable expectation of privacy, *Heller* invites the government itself to diminish the scope of a constitutional right by preventing certain arms from being in common use by civilians. Perhaps the *Heller* dicta will be applied only to weapons like short-barreled shotguns and machine guns, which are arguably inferior (or at least only marginally superior) to commonly-used firearms for purposes of self-defense. If so, the constitutional right will not be greatly affected. But the *Heller* opinion does not by its terms require, or even invite, such a narrow interpretation. The emergence of new technologies involving nonlethal weapons suggests that there is a very real possibility that *Heller* may soon be used to produce results that undermine the purpose of the Second Amendment.

## II. The Emergence of Nonlethal Weapons: Current Status and Law

### A. The Development of Nonlethal Weapons

Over the past fifty years, the impetus for the development of nonlethal weapons has come from three sources: the police, the military, and the general public.

The military has long had an interest in weapons that operate through some mechanism other than blunt trauma or penetrating wounds.<sup>32</sup> In general, such weapons were seen as supplements to traditional weapons, or in military lingo, as "force multipliers."<sup>33</sup> After poison gas was used to sometimes deadly effect in World War I, several nations signed international protocols and treaties to ban the use of chemical weapons.<sup>34</sup> To some extent, these legal bans simply rechanneled the military's interest into nonchemical alternative weapons. In waging limited wars after the mid-twentieth century, the military continued to seek out weapons technologies that were more graduated and discriminating than traditional weapons.<sup>35</sup> The political goals of such wars—to win the hearts and minds of indigenous populations—meant rules of engagement that restricted the use of lethal force in order to limit civilian casualties. Military operations in the Middle East over the past two decades have further catalyzed the military's interest in nonlethal weapons.

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31. See *supra* text accompanying note 15.

32. Neil Davison, The Early History of "Non-Lethal" Weapons 4-5 (unpublished manuscript, available at [http://www.brad.ac.uk/acad/nlw/research\\_reports/docs/BNLWRP\\_OP1\\_Dec06.pdf](http://www.brad.ac.uk/acad/nlw/research_reports/docs/BNLWRP_OP1_Dec06.pdf)).

33. *Id.* at 25.

34. Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, June 17, 1925, 26 U.S.T. 571, 94 L.N.T.S. 65.

35. Indep. Task Force Sponsored by the Council on Foreign Relations, Nonlethal Weapons and Capabilities 11 (2004) [hereinafter Indep. Task Force], available at <http://www.fas.org/rlg/040000-nonlethal.pdf>.

Two stories are illustrative. On the one hand, in March 1995, U.S. Marines armed with nonlethal weapons (ranging from low-tech pepper spray to high-tech lasers) extricated 2500 UN peacekeepers from densely populated Mogadishu, Somalia.<sup>36</sup> On the other hand, the sailors aboard the U.S.S. Cole were foreclosed from using lethal weapons against the small vessel that approached the destroyer.<sup>37</sup> The ensuing damage and loss of life aboard the Cole might have been averted had the sailors carried, and been authorized to use, nonlethal weapons. These two experiences intensified the military's interest in weapons that provide a continuum of force that can be adapted appropriately to a variety of missions. Created in 1996, the Joint Non-Lethal Weapons Directorate of the Department of Defense started with a tiny budget, but it was increased to \$45 million annually in 2004; further increases are almost certain.<sup>38</sup>

Until quite recently, domestic policing was a low-tech enterprise. As late as 1971, a report found that: "There have been few advances in police weaponry in recent times. . . . [O]fficers on the beat for the most part rely on the same weapons they did a century ago—their personal prowess, the nightstick, and the handgun."<sup>39</sup> Civil unrest in the 1960s sparked some interest in newer technologies,<sup>40</sup> but advanced weaponry was scarcely integrated into the day-to-day work of policing. In 1974, police forces were offered a chance to purchase what were labeled by their inventor as "Tasers."<sup>41</sup> These contraptions shoot wire-bound darts that ensnare a victim and discharge a high-voltage electrical shock; the impulse interferes with the brain's ability to control the body's muscular system, causing most victims to crumple helplessly to the ground.<sup>42</sup> In most cases Tasers cause no injuries and only

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36. *Id.* at i.

37. *See, e.g.*, David Koplow, Non-Lethal Weapons 28 n.30 (2006).

38. The Joint NLW Directorate is overseen by the Commandant of the Marine Corps, who is charged with "providing program recommendations for stimulating and coordinating joint nonlethal weapons requirements." Dep't of Def., Directive No. 3000.3, Policy for Non-Lethal Weapons (1996). Several defense contractors are already profiting from this Directorate's largesse. *See* Press Release, American Systems, Am. Sys. Awarded \$34.8 Million Dep't of Def. Blanket Purchase Agreement, (May 19, 2007), available at [http://www.2asc.com/NewsAndEvents/NLW\\_Contract\\_Win.htm](http://www.2asc.com/NewsAndEvents/NLW_Contract_Win.htm) (describing a \$35 million blanket purchase agreement with one contractor); Joint Non-Lethal Weapons Program Website, Solicitation Information, <https://www.jnlwp.com/admin/solicitations.asp> (last visited June 10, 2009) (describing various active solicitations). The Council of Foreign Relations recommended that the annual budget be increased to \$300 million. Indep. Task Force, *supra* note 36, at 2.

39. Davison, *supra* note 31, at 5 (quoting Dep't of Justice, Non-Lethal Weapons for Law Enforcement: Research Needs and Priorities (1971)).

40. The National Advisory Committee on Civil Disorder's Report in the aftermath of the 1967 riots in Newark and Detroit recommended "that in suppressing disorder, the police, whenever possible, follow the example of the U.S. Army in requiring the use of chemical agents before the use of deadly weapons." Davison, *supra* note 39, at 9 (quoting Nat'l Advisory Comm'n on Civil Disorders, Report of the National Advisory Commission on Civil Disorders (1968)).

41. "Taser" is an acronym of "Tom A. Swift Electrical Rifle," a reference to the Tom Swift fantasy stories that John Cover, the weapon's inventor, read during his childhood. Davison, *supra* note 39, at 13.

42. Daniel Engber, *How Do Tasers Work*, SLATE, Nov. 21, 2006 <http://www.slate.com/id/2154253/>; David A. Koplow, *Tangled Up in Khaki and Blue: Lethal and Non-Lethal Weapons in Recent Confrontations*,

fleeing, albeit intense, pain; but in some cases—estimates of how many vary widely—serious injuries and even death can result.<sup>43</sup> Police forces, however, at first had no interest in newfangled Tasers.<sup>44</sup> Similarly, pepper spray was developed as a hand-held weapon in the 1960s, but it was not until the 1980s that a government agency began to use it (and even then it was used only by the Postal Service as a dog repellent).<sup>45</sup>

One commentator notes that it was soon after the Supreme Court's 1985 decision in *Tennessee v. Garner*,<sup>46</sup> restricting the use of lethal force to stop a fleeing felon, that police forces across America awakened to the usefulness of advanced nonlethal weapons.<sup>47</sup> Old-fashioned nonlethal weapons—such as batons, rubber bullets, dogs, and tear gas—were all defective for obvious reasons,<sup>48</sup> but Tasers and pepper spray promised to liberate the police from the unsatisfactory choice of “bullhorns or bullets.”<sup>49</sup> Over the last decade, thousands of police forces across the United States have added these weapons to their ordinary arsenal.<sup>50</sup> Affording various perceived advantages to handguns and other nonlethal alternatives, Tasers are now so commonplace that the failure of a police officer to be equipped with one, and his consequent decision to use a firearm, led to a recent civil lawsuit.<sup>51</sup> Of course, police officers are also regularly sued for using Tasers unnecessarily, and stories of misuse continue to stir up controversy.<sup>52</sup> Despite sometimes vigorous objections, police forces across the United States and the world have embraced Tasers.<sup>53</sup> Sundry studies purport to demonstrate that equipping police with these devices has prevented many deaths and injuries.<sup>54</sup>

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36 Geo. J. Int'l L. 703, 717 (2005).

43. *Id.*

44. Davison speculates that police were “unimpressed” by the early version of the weapon, and were also mindful of “unfavourable public opinion about electrical weapons at the time.” Davison, *supra* note 39, at 13.

45. “Pepper spray,” in its current form uses a chemical, oleoresin capsicum (OC), that is derived from cayenne pepper. Koplow, *supra* note 42, at 718. It has supplanted tear gas and Mace as the preferred active agent in nonlethal chemical sprays. *See, e.g.*, Koplow, *supra* note 42, at 719.

46. 471 U.S. 1, 3 (1985) (“We conclude that [deadly] force may not be used unless necessary to prevent the escape [of an apparently unarmed felon] and the officer has probable cause to believe that the suspect poses a significant threat of death or serious physical injury to the officer or others.”).

47. Davison, *supra* note 39, at 22–23.

48. To mention a few defects: batons are effective only at close range, rubber bullets can be deadly, an enraged dog is hard to control, and tear gas and other chemicals are often ineffective. Koplow, *supra* note 45, at 712.

49. *Id.* at 703.

50. *Taser FAQs*, CBC News, Mar. 31, 2009 <http://www.cbc.ca/canada/story/2009/03/18/f-taser-faq.html> (citing Taser International press release claiming that 13,400 police forces in 44 countries now use the device).

51. In *Martinez v. County of Los Angeles*, 54 Cal. Rptr. 2d 772, 779 (Ct. App. 1996), the plaintiff in a civil rights suit argued that police should have been equipped with nonlethal weapons, such as Tasers and Mace.

52. *See, e.g.*, Buckley v. Haddock, 292 F. App'x 791 (11th Cir. 2008); M.J. Stephey, *Are Tasers Being Overused?*, Time.com, Oct. 31, 2007, <http://www.time.com/time/nation/article/0,8816,1678641,00.html>.

53. *Police to be armed with stun guns*, BBC News, Nov. 24, 2008, <http://news.bbc.co.uk/1/hi/uk/7745137.stm> (reporting that 30,000 police officers across the United Kingdom will be equipped with Tasers). The Royal Canadian Mounted Police recently discontinued their use of Tasers, at least temporarily, when a

Civilian interest in pepper spray and Tasers has soared in recent years, and there are now dozens of companies peddling these products on the Internet.<sup>55</sup> Although companies have creatively marketed their products and pitched to groups that have shown little interest in firearms,<sup>56</sup> few people are getting rich selling these weapons to the public. Taser International, Inc., the largest domestic Taser manufacturer, has a market capitalization of less than \$300 million, and most of its customers are domestic police forces.<sup>57</sup>

## B. The Effectiveness of Pepper Spray and Tasers

Compared with firearms, how useful are pepper spray and Tasers as weapons of self-defense?<sup>58</sup> We suggest four metrics: (1) how easily the weapon can be used, especially by those not trained in self-defense; (2) how effectively the weapon deters would-be attackers; (3) how effectively, if used, the weapon stops an attacker; and (4) how effectively the weapon minimizes harm to the target.

Judged by ease of use<sup>59</sup> and minimization of harm,<sup>60</sup> pepper spray and Tasers are generally superior to traditional lethal weapons, such as handguns and shotguns. However, they are grossly inferior in deterrent value. To be sure,

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study found that Tasers occasionally deliver shocks of more voltage than advertised. Ronald Hensen & Robert Anglen, *Canadian Police pull old Tasers off Streets*, Ariz. Republic, Dec. 12, 2008, available at <http://www.azcentral.com/news/articles/2008/12/12/20081212taser1212.html>.

54. See, e.g., Memorandum from Douglas E. Klint, Vice President and General Counsel, Taser Int'l (June 25, 2007) available at <http://www.taser.com/SiteCollectionDocuments/Controlled%20Documents/Legal/TASER%20Device%20Liability%20and%20Litigation%20Risk.pdf> (collecting studies from several police forces claiming to find substantial reductions in injuries during use-of-force encounters when police carry Tasers).

55. See, e.g., Stun Guns, Air TASER, Pepper Spray at Low Prices, <http://www.beststungun.com> (last visited June 10, 2009).

56. At least one entrepreneur has conducted "Taser parties" for suburban women to interest them in the product. *Taser "Parties" Pitching Them To Women*, CBS News, June 25, 2008, [http://www.cbsnews.com/stories/2008/06/25/earlyshow/main4207156.shtml?source=RSSattr=SciTech\\_42071](http://www.cbsnews.com/stories/2008/06/25/earlyshow/main4207156.shtml?source=RSSattr=SciTech_42071)

56. Tasers can now be purchased in metallic pink. See RV Protection Products, Taser C2, <http://www.rvprotectionproducts.com/index.php?p=product&id=1134&parent=159> (last visited June 10, 2009).

57. See TASER International, Inc., Yahoo! Finance, <http://finance.yahoo.com/q?s=tasr> (reporting a market capitalization of \$276 million on June 13, 2009).

58. We focus on these two nonlethal weapons because they are the most commonly used by the police and general public.

59. Pepper spray is discharged from a pressurized canister that requires very little skill or effort. Karen M. Blum & John J. Ryan, *Recent Developments in the Use of Excessive Force by Law Enforcement*, 24 *TOURO L. REV.* 569, 590 (2008). Tasers, when "shot," must be aimed, but are reported to have no recoil. Advanced Taser M18/M18L Frequently Asked Questions, <http://www.taserstore.org/taser-faq.html> (last visited June 10, 2009) (follow "11. Is using a TASER similar to shooting a gun?" hyperlink).

60. This is not to say, of course, that pepper spray and Tasers cause no harm, or even occasional fatalities, but simply that they cause less harm and fewer fatalities than firearms. Of course, it could be argued that they are overused precisely because they are regarded as nonlethal and therefore not dangerous. ACLU chapters across the country have written studies alleging police overuse of pepper spray and Tasers. See, e.g., ACLU of Nebraska, *Taser Use By Nebraska Law Enforcement: The Case for Policy Reform* (2005), available at <http://aclunebraska.org/ACLU%20Taser%20study.pdf>; ACLU of Southern California, *Pepper Spray: A Magic Bullet Under Scrutiny* (1993).

nonlethal weapons create a risk of injury, as well as of arrest and imprisonment, which provides some deterrent value. But their threat value pales in comparison with the threatened use of a firearm. As Eugene Volokh has observed, the threat “I have a gun!” will always be more hair-raising than “I have a Taser!” or “I have pepper spray!”<sup>61</sup>

With respect to stopping power, pepper spray and Tasers are also inferior to handguns. Pepper spray can be projected from pressurized canisters as far as twenty feet, but it must hit exposed skin, or at least thin clothing, to disable the victim, and there is the risk that wind will blow the spray back on the person firing it. More importantly, pepper spray’s effectiveness against those enflamed by rage or drugs has been questioned.<sup>62</sup> Turning to Tasers, their manufacturers make grandiose claims about the weapon’s stopping power, even claiming it compares favorably to that of handguns.<sup>63</sup> Although one can overstate the effectiveness of ordinary handguns,<sup>64</sup> claims that Tasers are superior in this regard to handguns are hard to credit. As with pepper spray, a Taser’s usefulness against those energized to commit violence has been undercut by anecdotal evidence.<sup>65</sup> As a weapon of self-defense, one of the Taser’s drawbacks is that it typically fires only once, and therefore offers little help if there is a second attacker or if the first shot misses its target.<sup>66</sup> In addition, heavy clothes may dampen its impact,<sup>67</sup> and a victim may even be

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61. Eugene Volokh, *Implementing the Right to Keep and Bear Arms: An Analytical Framework and a Research Agenda*, 56 UCLA L. Rev. (forthcoming June 2009) (manuscript on file with authors).

62. See Koplow, *supra* note 42, at 719.

63. Brandi Wheeler, StreetDirectory.com, Protect yourself With the Advanced Taser M181, [http://www.streetdirectory.com/travel\\_guide/60904/home\\_security/protect\\_yourself\\_with\\_the\\_advanced\\_taser\\_m181.html](http://www.streetdirectory.com/travel_guide/60904/home_security/protect_yourself_with_the_advanced_taser_m181.html) (last visited June 10, 2009) (claiming police studies show that a Taser has more incapacitating power than a 9mm handgun).

64. See Evan P. Marshall & Edwin J. Sanow, Handgun Stopping Power: The Definitive Study 3 (1992) (“With the exception of a wound to the brain stem, handgun bullets cannot be depended upon to take effect that fast. Sometimes the bullet will produce no visible effect at all. It may take 30 to 90 seconds or longer for the person to fall.”).

65. To take one notorious example, when Rodney King was Tasered, “rather than causing [him] to fall down, . . . [he] rose up to his feet and groaned, ‘Ahh, ahh,’ and started advancing toward [the police officer].” Ty Apler, *Stories Told and Untold: Lawyering Theory Analyses of the First Rodney King Assault Trial*, 12 Clinical L. Rev. 1, 37 (2005) (quoting Trial Transcript); see also Eric M. Weiss, *Va. Man Dies After Battles With Officers*, Wash. Post, Aug. 18, 2004, at B3 (reporting that a man who continued to resist police officers despite being Tasered and pepper sprayed was finally stopped, and was killed, when shot by handgun).

66. Tom Harris, *How Stun Guns Work*, HowStuffWorks, <http://electronics.howstuffworks.com/gadgets/other-gadgets/stun-gun5.htm> (last visited June 10, 2009) (“The disadvantage is that you only get *one shot*—you have to wind up and re-pack the electrode wires, as well as load a new gas cartridge, each time you fire. Most Taser models also have ordinary stun-gun electrodes, in case the Taser electrodes miss the target.”).

67. See, e.g., Peter Akman, *Suspect Fleeting Police Smashes Into Car, Withstands Taser Jolt*, CBCNews.CA, March 31, 2009, <http://www.cbc.ca/canada/calgary/story/2009/03/31/cgy-deerfoot-memorial-crash-chase.html> (“Stewart said an officer deployed a Taser once, but it was ineffective because the shock didn’t penetrate through the suspect’s heavy clothing.”). Another possible drawback is the development of counter-technologies, such as Taser-Proof clothes. *Taser-proof Clothing Creates New Hazard*, New Scientist, Nov. 2007, at 29, available at <http://www.newscientist.com/article/mg19626296.400-taserproof-clothing-creates-new-hazard.html>.

able to remove the darts from his body,<sup>68</sup> not something one can do with a bullet in the torso, let alone the head.

### C. The Law of Nonlethal Weapons

Anomalies festoon the law of nonlethal weapons. At times not regulated at all, at times completely banned, nonlethal weapons are subject to a patchwork of local, state, federal and even international regulation.

Pepper spray is generally unregulated by the federal government. Many states prohibit felons and minors from owning pepper spray,<sup>69</sup> and some states regulate the size of the canisters and the concentrations of the liquid.<sup>70</sup> But for adult Americans not convicted of a felony, pepper spray is widely available and legal.<sup>71</sup> International law—in particular, the Chemical Weapons Convention<sup>72</sup>—is arguably more restrictive of the use of pepper spray and tear gas. Although a fourteen-year-old American strolling through downtown Spokane is free, provided he has parental consent, to carry pepper spray,<sup>73</sup> some have argued that his twenty-year-old brother in Baghdad can do so only in narrowly defined circumstances.<sup>74</sup>

Tasers present an even more complicated story. When Tasers were first developed, the Consumer Product Safety Commission claimed jurisdiction in 1975,<sup>75</sup> followed by the Bureau of Alcohol, Tobacco and Firearms (ATF) in

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68. See, e.g., *People v. Brown*, 2008 WL 4597402, at \*2 (Ct. App. 2008) (“Corporal Wills fired darts from a taser towards defendant’s chest, but they appeared to have no effect. Corporal Wills again fired darts from a taser, which struck defendant’s chest. Defendant doubled over and screamed, but then pulled the darts from his chest and ran from the room.”).

69. See, e.g., N.J. Stat. Ann. § 2C:39-6i. (West 2005); N.Y. Penal Law § 265.25 (McKinney 2008).

70. See, e.g., Cal. Penal Code § 12403.7 (West 2000); Mich. Comp. Laws § 750.224d (date).

71. Eugene Volokh’s forthcoming article on the topic has an exhaustive appendix that compiles all state and local laws, and regulations, banning or restricting the use of Tasers. Eugene Volokh, *Nonlethal Self-Defense, Stun Guns, and the Rights to Keep and Bear Arms, Defend Life, and Practice Religion*, 62 Stan. L. Rev. app. (forthcoming 2009–2010), available at <http://www.law.ucla.edu/volokh/stungun.pdf>. He identifies only seven states and a dozen localities that have outright bans. *Id.* His appendix also indicates that a scattering of other jurisdictions regulate ownership and use of Tasers by minors and felons. *Id.*

72. Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on Their Destruction, opened for signature Jan. 13, 1993, S. Treaty Doc. No. 103-21, 1974 U.N.T.S. 317.

73. The State of Washington permits minors fourteen and older to carry pepper spray, with parental consent. Wash. Rev. Code § 9.91.160 (—).

74. See, e.g., Geoffrey Lean & Severin Carroll, *U.S. Prepares To Use Toxic Gases In Iraq*, Independent, Mar. 2, 2003, available at <http://www.independent.co.uk/news/world/americas/us-prepares-to-use-toxic-gases-in-iraq-599193.html> (“The U.S. is preparing to use the toxic riot-control agents CS gas and pepper spray in Iraq in contravention of the Chemical Weapons Convention.”) This supposed anomaly is lamented in the Report of the Council on Foreign Relations, see Indep. Task Force, *supra* note 40, at 51–52, but it should be noted that, notwithstanding the protests and perhaps dubiously restrictive interpretations of the Chemical Weapons Convention proffered by some, U.S. military personnel in Iraq now regularly carry pepper spray and Tasers. See Roxana Tiron, *Unconventional Weapons Can Help U.S. Troops Fight Insurgents in Iraq*, Nat’l Def., Sept. 2004, at 38–39, available at <http://www.ref.army.mil/pdfs/Unconventionalweapons.pdf>.

75. Memorandum from Jeanette Michaels, OGC, to Tom McKay, OCR, U.S. Consumer Prod. Safety Comm’n (Nov. 7, 1975), available at <http://www.cpsc.gov/LIBRARY/FOIA/advisory/226.pdf>.

1976;<sup>76</sup> these agencies meddled with sales to the public, and even banned them for a time.<sup>77</sup> After ATF abandoned the field,<sup>78</sup> Tasers became a matter for state and local regulation. In a substantial minority of states, felons<sup>79</sup> and minors<sup>80</sup> are prohibited by state law from owning Tasers, and even law-abiding adults are confronted with outright bans in seven states and the District of Columbia.<sup>81</sup> In addition, some states that permit civilians to carry firearms in a concealed manner have outright bans on doing so with Tasers.<sup>82</sup> One wonders why people deemed responsible enough to possess or carry a handgun would not be trusted with Tasers.

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76. Memorandum from Jeanette Michaels, OGC, to the U.S. Consumer Prod. Safety Comm'n, (Mar. 22, 1976), available at <http://www.cpsc.gov/LIBRARY/FOIA/advisory/236.pdf>.

77. Davison, *supra* note 32, at 13–14.

78. See Shaun H. Kadir, *Stunning Trends in Shocking Crimes: A Comprehensive Analysis of Taser Weapons*, 20 J.L. & HEALTH 357, 367 n.83 (2007) (“The Federal Bureau of Alcohol, Tobacco, Firearms, and Explosions classifies a device as a firearm when it ‘expel[s] a projectile by the action of an explosive.’ Tasers, however, use compressed nitrogen gas as propellant.” (quoting 18 U.S.C. § 921(a)(3)(A) (2006))).

79. See, e.g., Cal. Penal Code § 12650 (West 2000); Conn. Gen. Stat. § 53a-217 (2009); Nev. Rev. Stat. § 202.357 (—); N.H. Rev. Stat. Ann. § 159.21 (2002); Va. Code Ann. § 18.2-308.2 (2004 & Cum. Supp. 2008).

80. See, e.g., Ark. Code Ann. § 5-73-133 (2005) (prohibiting ownership by or sale to a person under eighteen); Cal. Penal Code § 12650 (prohibiting ownership by or sale to a person under sixteen); Minn. Stat. § 62A.731 (2008) (prohibiting ownership by or sale to a person under eighteen).

81. See, e.g., D.C. Stat. Ann. § 7-2501 (2001); Haw. Rev. Stat. § 134-16 (1993 & Supp. 2007) (“It shall be unlawful for any person, including a licensed manufacturer, licensed importer, or licensed dealer, to possess, offer for sale, hold for sale, sell, give, lend, or deliver any electric gun.”); Mass. Gen. Laws ch. 140, § 131J (2007) (“No person shall possess a portable device or weapon from which an electric current, impulse, wave or beam may be directed, which current, impulse, wave or beam is designed to incapacitate temporarily, injure or kill . . . No person shall sell or offer for sale such device or weapon . . .”); Mich. Comp. Laws § 750.224a(1) (—) (“A person shall not sell, offer for sale, or possess in this state a portable device or weapon from which an electric current, impulse, wave or beam is designed to incapacitate temporarily, injure, or kill.”); N.J. Stat. Ann. § 2C:39-1(h) (West 2005) (“Any person who knowingly has in his possession any stun gun is guilty of a crime of the fourth degree.”); N.Y. Penal Law § 265.01 (McKinney 2008) (making it a felony to “[possess] any firearm, electronic dart gun, electronic stun gun.”); R.I. Gen. Laws § 11-47-42 (2002) (“No person shall carry or possess or attempt to use against another any instrument or weapon of the kind commonly known as a . . . stun-gun . . .”); Wis. Stat. § 941.295 (—) (“whoever sells, transports, manufactures, possesses or goes armed with any electric weapon is guilty of a Class H felony”); see also Paul H. Robinson, *A Right to Bear Firearms But Not to Use Them? Defensive Force Rules and the Increasing Effectiveness of Non-Lethal Weapons*, 89 B.U. L. Rev. 251, 252 n.9 (2009) (collecting most of these statutes). In addition, within some states that permit the ownership of Tasers, there are cities and counties that prohibit them. See, e.g., Baltimore, Md., City Code art. 19, § 59-28(a)(1) (“It shall be unlawful for any person, firm, or corporation to sell, give away, lend, rent or transfer to any individual, firm or corporation a stun gun or other electronic device by whatever name or description which discharges a non-projectile electric current within the limits of the City of Baltimore.”); Howard County, Md., § 8.404. (“It shall be unlawful for an person, firm, or corporation to sell, give away, lend, rent or transfer to any individual, firm or corporation an electronic weapon within the limits of Howard County. It further shall be unlawful for any person to possess, fire, discharge or activate any electronic weapon within the limits of Howard County.”); Philadelphia, Pa., City Ordinance § 10-825 (“No person shall own, use, possess, sell or otherwise transfer any ‘stun gun.’”). New York State prohibits Tasers and New York City applies a second level of illegality. N.Y., N.Y., City Administrative Code § 10-135 (“It shall be unlawful for any person to sell or offer for sale or to have in his or her possession within the jurisdiction of the city any electronic gun.”).

82. Conn. Gen. Stat. 53-206 (2009); N.C. Gen. Stat. § 14-269(a) (2005).

### III. The Future of Nonlethal Weapons: From Super-Tasers to Phasers

War, Thucydides observed, is an stern teacher.<sup>83</sup> Violent struggle has spurred technological progress over the centuries. Although it is true that gunpowder, over a millennium old, is still a staple ingredient in lethal weaponry today, the push for more powerful and versatile weapons has already led mankind in terrifying directions, and there is no indication that we have reached anything close to a terminal point in weapons technology. Rail guns, lasers, and pulsed energy have already emerged in some workable, or close to workable, form.<sup>84</sup> And there is every reason to believe that the handguns of today, which are not much more advanced than those of a century ago, are poised for substantial improvements. Lighter and more reliably deadly weapons will continue to even the playing field between the physically strong and weak, which may require an update to the old adage that God made men, and Samuel Colt made them equal.<sup>85</sup>

Nonlethal weapons will also improve dramatically. There are already several nascent nonlethal technologies developed by the military that may have civilian uses. One example is the Active Denial System (ADS). This weapon focuses a beam of electromagnetic radiation that heats the victim's outermost skin, causing acute pain, but without burning or causing permanent damage.<sup>86</sup> The technology could easily be adapted into a lethal variant,<sup>87</sup> providing the user, at least in theory, with the choice of a range of force in dealing with an attacker. The original ADS technology was adapted by the Air Force Research Laboratory, but Raytheon Company last year started selling a more mobile version, called Silent Guardian, to police forces in the United States and United Kingdom.<sup>88</sup> The next step in this evolution would be smaller and more mobile versions that could be used by civilians for self-defense.

If Tasers have been the subject of much criticism by civil liberties organizations and the "human rights community,"<sup>89</sup> ADS-type weapons are possibly even more gruesome. The infliction of pain is the intended, not incidental, result of their operation: they incapacitate by causing acute pain.

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83. Thucydides, *History of the Peloponnesian Wars*, 242 (Rex Warner trans., Penguin Classics 1985).

84. David Allan Adam, *Naval Rail Guns are Revolutionary*, *Proceedings Mag.*, Feb. 2003, available at <http://edusworld.org/ew/ficheros/2004/railguns.pdf>; Erik Sofge, *World's Most Powerful Rail Gun Delivered to Navy*, *POPULAR MECHANICS*, Nov. 14, 2007, available at [http://www.popularmechanics.com/technology/military\\_law/4231461.html](http://www.popularmechanics.com/technology/military_law/4231461.html).

85. An old adage the origins of which are obscure. Another version was, "Abe Lincoln may have freed all men, but Samuel Colt made them equal."

86. See Jurgen Altmann, *Millimetre Waves, Lasers, Acoustics for Non-Lethal Weapons? Physics Analyses and Inferences 14–28* (2008), available at <http://www.bundesstiftung-friedensforschung.de/pdf-docs/berichtaltmann2.pdf>.

87. *Id.* at 28 ("[T]he ADS could be called non-lethal beyond any doubt only if technical limiters were built in which guarantee that a target subject would not be heated to more than 55–60 [degrees Celsius] skin temperature under any circumstance.").

88. See Raytheon Silent Guardian Product Brief (2006), available at [http://www.raytheon.com/capabilities/products/stellent/groups/public/documents/content/cms04\\_017939.pdf](http://www.raytheon.com/capabilities/products/stellent/groups/public/documents/content/cms04_017939.pdf).

89. See *supra* note 60.

Grotesque uses are not hard to imagine,<sup>90</sup> and other technologies that are superior by our fourth metric (minimization of harm) will likely be preferred. In addition, it may be easy to defend against ADS attacks: aluminum foil might be sufficient.

Another nonlethal technology that has recently attracted interest is the Long Range Acoustical Device (LRAD), which directs beams of painfully loud sounds, in theory forcing those in its acoustical path to cover their ears and beat a hasty retreat.<sup>91</sup> Although an LRAD can cause permanent hearing damage, it does not risk mortal injury,<sup>92</sup> and has already been used by the U.S. military in Iraq and by a few police forces in riot control situations.<sup>93</sup> Were it practicable, an acoustical device would be a significant advance over Tasers, ADS-type weapons, and traditional firearms precisely because it achieves its results without risk of grave harm (other than burst eardrums). Yet there are doubts about how effective acoustical devices can be in deterring and stopping attackers. One can, for example, easily imagine the protestors of the future wearing not only bandanas as protection against tear gas, but earmuffs as well. The LRAD's utility was recently called into further question as a result of its failure to deter pirates in the Gulf of Aden.<sup>94</sup>

Yet another nonlethal technology that has already been used is the Mobility Denial System (MDS), which is military-speak for a hydrocarbon-based slippery gel.<sup>95</sup> An MDS precursor, dubbed "superfoam," was used by U.S. soldiers in Somalia in 1995 with some success,<sup>96</sup> and the Department of Energy is interested in such technology to protect facilities with weapons-grade uranium and nuclear power plants.<sup>97</sup> At least in its present form, MDS is problematic as a weapon of self-defense. If used only against an attacker's lower extremities, his hands will still be free (e.g., to fire a pistol); but if directed against an attacker's entire body, it could be ingested through the mouth or nose, and therefore become gruesomely lethal.

In short, none of these weapons appears to be equal to traditional firearms for self-defense. Great improvements are likely, however, either through incremental improvements to Tasers, or through some breakthrough technology. One can imagine the development of what we will call Super-

90. Its utility as an instrument of torture has not escaped notice. See Altmann, *supra* note 86, at 28.

91. Altmann, *supra* note 86, at 44.

92. See, e.g., Altmann, *supra* note 86, at 46.

93. *Troops in Iraq Get High Tech Noisemaker*, Military.com, Mar. 3, 2004, at [http://www.military.com/NewsContent/0,13319,FL\\_noise\\_030304,00.html?ESRC=eb.nl](http://www.military.com/NewsContent/0,13319,FL_noise_030304,00.html?ESRC=eb.nl).

94. David Osler, *Sonic Solution May Not Be A Sound Investment*, Lloyd's List, Dec. 2, 2008, <http://www.lloydslist.com/ll/news/sonic-solution-may-not-be-a-sound-investment/1228132740372.htm>.

95. David Hambling, *The Army's Banana Peel Weaponry*, WIRED, July 31, 2008, available at <http://www.wired.com/dangerroom/2008/07/slippery-busine/>.

96. Noah Shachtman, *Army Reloads on Sticky Foam Weaponry*, WIRED, Feb. 26, 2009, available at <http://www.wired.com/dangerroom/2009/02/foam-based-vehi/>.

97. Michael Ficks, *Stuck on Security*, Gov't Sec., Feb. 1, 2004, [http://govtsecurity.securitysolutions.com/ar/security\\_stuck\\_security/index.htm](http://govtsecurity.securitysolutions.com/ar/security_stuck_security/index.htm).

Tasers, which solve many of the problems with that weapon in its current form. Super-Tasers will be able to shoot multiple projectiles, have a greater firing range, and more reliably discharge a voltage calibrated to incapacitate without proving fatal. At some point, these Super-Tasers might become competitors to handguns as weapons of self-defense, as judged by the four metrics sketched above. They might prove at least as easy to use and of equivalent or greater stopping power, while being superior in terms of minimization of harm.

Super-Tasers will, however, forever have less deterrent effect than handguns, at least as long as the voltage discharged is designed to incapacitate without being deadly. Again, the problem is that the threat “I have a Super-Taser!” is simply not as harrowing as “I have a gun!”. This suggests, however, a possible next generation of nonlethal weaponry. Without in any way suggesting the physics of such a device, which we will call Phasers, they will offer the user the rheostatic option to choose a spectrum of force, anywhere from trivial to lethal—that is, they could be set, like the weapons of Star Trek, to “stun” or “kill.” The threat “I have a Phaser!” would then approach the threat “I have a gun!” in deterrent effect, as the potential target would not know what level of force is contemplated. Phasers will be easy to use, have instant stopping power, and accomplish this result without any risk of permanent harm, at least when set in “stun” mode. One might discount all this as fanciful, but given the exponential rate of technological advancement in many other fields, it would be rash to think it impossible. Having imagined the technology, we now consider the legal regimes that might arise to govern it.

#### IV. Regulating Nonlethal Weapons

Will the regulatory environment be nurturing or noxious for future nonlethal weapons? The answer may depend on how the weapons come into being. If Super-Tasers emerge through incremental improvements to existing products, regulators at the state and federal level may face politically difficult choices. As discussed earlier, Tasers are widely legal today.<sup>98</sup> If Tasers become incrementally better, and eventually become Super, this development will stimulate both the demand for the product and the demand for the product’s regulation. On the one hand, people will come to regard Super-Tasers as legitimate substitutes for handguns as weapons of self-defense. On the other hand, if Super-Tasers are more widely used, there will inevitably be more instances of abuse, real and alleged.

We can only speculate on how these competing interests will play out in the legislative process. Some organizations, perhaps philosophically opposed to an armed citizenry, will find it easy to point to incidents of Super-Taser abuse in lobbying legislators to regulate them. The companies selling these products would of course lobby in the opposite direction. Gun-rights organizations might expend resources opposing bans on Super-Tasers, fearing a slippery slope toward more restrictive firearms regulation, and ultimately

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98. See *supra* note 71.

toward a complete ban on useful weapons of self-defense. On the other hand, these groups might fear that the proliferation of Super-Tasers will undermine the case for gun rights. If one can defend oneself effectively with a nonlethal Super-Taser, what need is there to own a lethal gun?

Reducing all of these conflicting considerations to a simple prediction is impossible. Although we can imagine some states that now permit Tasers deciding to ban Super-Tasers, we think it unlikely that the federal government, after abstaining from regulating Tasers four decades ago,<sup>99</sup> is likely to terminate sales of Super-Tasers in the future. Federal government involvement in Phaser sales would be far more likely. Here we would likely be dealing with a breakthrough technology that had arisen, in all likelihood, as a military weapon. One possible trajectory for Phaser regulation is reflected in the story of Global Positional System (GPS) technology. GPS was developed by the U.S. Department of Defense in the mid-twentieth century, and access was originally denied to non-U.S. military personnel.<sup>100</sup> After Korean Air Lines Flight 007 flew off course and was shot down by Soviet fighter planes in 1983, President Ronald Reagan made GPS technology, in a degraded form, available for commercial air travel purposes.<sup>101</sup> By the 1990s, civilians more generally were given access to GPS technology, albeit encumbered by a feature that introduced substantial errors.<sup>102</sup> In 2000, President Clinton finally allowed civilians access to the error-free GPS technology.<sup>103</sup>

If this is to be a model of Phaser regulation, we might predict that the military will strive at first to keep the principles and the technology to itself. Sparked by some incident, however, the federal government will be prodded to afford access for some nonmilitary purposes. The Phaser's first generation would likely be massive, requiring large energy expenditures, affixed atop a truck or tank, and intended for battlefield use. A second generation product would be smaller, perhaps mounted to a van, and adapted for police in riot control situations. Eventually, a third generation would be small and light enough for use by soldiers in battle or police officers on the beat. The price, at first prohibitive, would eventually render the potential purchase and use by civilians a legitimate issue. Eventually, civilians would be allowed to purchase and use Phasers.

A different trajectory is suggested by the story of machine gun regulation. Machine guns were first widely used by the military in the twentieth century. Before any robust civilian market arose, the National Firearms Act of 1934

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99. See *supra* note 78 and accompanying text.

100. See Jonathan M. Epstein, *The Role of the Global Positioning System in the Environment*, 6 N.Y.U. ENVTL. L.J. 72, 74 (1997).

101. *Id.*

102. Press Release, Office of Sci. and Technology Policy, Improving the Civilian Global Positioning System (GPS) (May 1, 2000) available at [http://clinton4.nara.gov/textonly/WH/EOP/OSTP/html/0053\\_4.html](http://clinton4.nara.gov/textonly/WH/EOP/OSTP/html/0053_4.html).

103. *Id.*

subjected the sale and ownership of machine guns to an oppressive licensing and taxation regime,<sup>104</sup> and the Firearms Owners' Protection Act of 1986 effectively froze the supply of machine guns available to civilians.<sup>105</sup> Today, notwithstanding the fact that machine guns are standard-issue military weapons, there are very few in the hands of the general public.<sup>106</sup> With respect to Phasers, one can imagine that Congress, lobbied by the Defense Department, would institute an onerous licensing and taxation regime for Phaser sales to the general public, effectively banning their manufacture for civilian use. State legislatures, lobbied by anti-weapons organizations, would add another layer of regulation and outright bans. Phasers, however widely used by the military, would be extraordinarily uncommon in the general public: in the words of *Heller*, they would constitute “dangerous and unusual weapons”<sup>107</sup> and would not be of a kind “typically possessed by law-abiding citizens for lawful purposes.”<sup>108</sup>

## V. Legal Challenges to Bans on Nonlethal Weapons

### A. The Law of Self-Defense

Before considering possible legal challenges to bans on nonlethal weapons, we take a brief detour to consider the law of self-defense. As Paul Robinson has noted, *Heller* did not purport to alter the criminal law of self-defense.<sup>109</sup> That law provides that any use of force in defense of property or life must be necessary to repel the attack and proportionate to the threat posed.<sup>110</sup> Even for police officers, these basic principles apply, albeit refracted through the lens of the Fourth Amendment's prohibition on unreasonable searches and seizures. As the Supreme Court ruled in *Tennessee v. Garner*, police officers are forbidden from using “excessive force” in any confrontation with a civilian.<sup>111</sup> There are already dozens of cases alleging “excessive force” when police officers have used Tasers,<sup>112</sup> but it is interesting to note a

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104. See National Firearms Act, ch. 757, 48 Stat. 1236 (codified as amended at 26 U.S.C. §§ 5801–5872 (2006)).

105. See Pub. L. No. 99-308, 100 Stat. 449 (codified as amended in scattered sections of 18 and 26 U.S.C.).

106. Since 1986, federal law has frozen the number of such weapons that can be legally registered for civilian use at about 240,000 in a nation of over 300 million people. See 18 U.S.C. § 922(o) (2006); Marianne W. Zawitz, U.S. Dep't of Justice, Guns Used in Crime 4 (1995), available at <http://www.ojp.usdoj.gov/bjs/pub/pdf/guic.pdf>.

107. 128 S. Ct. at 2817 (citations omitted).

108. *Id.* at 2816.

109. Robinson, *supra* note 81, at 252.

110. *Id.* at 253.

111. 471 U.S. 1, 7–15 (1985).

112. See, e.g., *Parker v. City of S. Portland*, No. 06-129-P-S, 2007 WL 1468658 (D. Me. May 18, 2007); *McGee v. City of Cincinnati Police Dept.*, No. 1:06-CV-726, 2007 WL 1169374, (S.D. Oh. Apr. 18, 2007); *Landis v. Cardoza*, 515 F. Supp. 2d 809 (E.D. Mich. 2007); *Roberts v. Manigold*, 240 F. App'x 675, 678 (6th Cir. 2007); *Draper v. Reynolds*, 369 F.3d 1270 (11th Cir. 2004). See generally *Kedir*, *supra* note 78 at 368–75.

scattering of cases alleging police misconduct because of the *failure* to use Tasers.<sup>113</sup>

There is an unmistakable logic to the latter argument: police, just like citizens in self-defense situations, may use only that force necessary to obtain their lawful objectives. Imagine that a person makes a threatening gesture at a police officer, and moves in the officer's direction. The police officer is entitled, of course, to use force, but only enough to repel the attack and make an arrest. If the only weapon the officer carried was a firearm, it might be lawful to use it; but if the officer also carried a Taser or pepper spray, the use of the firearm might be illegal. Or, stepping back, the failure of a locality to equip the officer with a Taser could give rise to municipal liability. The latter claim would become more viable as more and more police forces equipped their officers with Tasers.

Tasers are available to the public, and similar lawsuits might someday be brought against civilians who use firearms in self-defense. In public, and even within one's home, a civilian may use only that force necessary to repel an attack.<sup>114</sup> The decision to use more force than necessary in defense of property and life can give rise to civil and even criminal liability.<sup>115</sup> One may even incur liability with respect to one's choice of ammunition. For example, a damaging fact in the trial of Harold Fish, an Arizona man convicted of murder in connection with the shooting death of a threatening homeless man, was that Fish had used 10mm hollow point rounds.<sup>116</sup> Fish's use of this ammunition, which prosecutors insinuated was peculiarly lethal, contributed, at least atmospherically, to undercutting Fish's claims that he acted in self-defense.<sup>117</sup> Perhaps in the future, if Super-Tasers or Phasers are widely available to the public and comparable in cost to handguns, the choice to use the latter will likewise undercut self-defense claims when civilians use lethal force.

## B. Challenges to Taser Bans

Before *Heller*, the District of Columbia banned the ownership by the general public of Tasers.<sup>118</sup> This ban was not challenged, and it was nowhere mentioned in *Heller*'s majority or dissenting opinions. In the aftermath of the decision, the District of Columbia loosened its statutory restrictions on handguns, but left unaffected the provision on "dangerous devices," which run

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113. See, e.g., *Martinez v. County of Los Angeles*, 47 Cal. Rptr. 2d 772, 779 (Ct. App. 1996); *Day v. County of Contra Costa*, No. C 07-4335, 2008 WL 4858472, at \*4 (N.D. Cal. Nov. 10, 2008) (noting the police officer's failure to carry a Taser).

114. See Renée Lettow Lerner, *The Worldwide Popular Revolt Against Proportionality in Self-Defense*, 2 J.L. Econ. & Pol'y 331, 332-33 (2006).

115. Paul H. Robinson, *A Right to Bear Firearms But Not To Use Them? Defensive Force Rules and the Increasing Effectiveness of Non-Lethal Weapons*, 89 B.U. L. REV. 251, 253 (2009).

116. See John Larson, *Trail of Evidence*, MSNBC.com, Oct. 9, 2006, <http://www.msnbc.msn.com/id/15199221> (noting that the prosecutor said, "Mr. Fish knew well what a hollow-point bullet does.").

117. Larson, *supra* note 116.

118. See D.C. Stat. Ann. § 7-2501 (2001). The D.C. law also regulated pepper spray purchases. *Id.*

the gamut from poison gas and grenades to Tasers.<sup>119</sup> The District of Columbia is now in the somewhat odd, though not unprecedented, position of regulating ownership of handguns less stringently than ownerships of Tasers. As noted earlier, seven states have outright bans of Tasers,<sup>120</sup> and in some states, such as Michigan, carrying handguns is permitted, while carrying Tasers is outlawed.<sup>121</sup> In 2008, three state legislators introduced a bill in the Michigan legislature to permit the general public to purchase stun guns.<sup>122</sup> If the Michigan bill is not enacted, would a judicial challenge to its Taser ban, or the Taser ban now in effect in the District of Columbia, survive post-*Heller* scrutiny?<sup>123</sup>

There have already been dozens of federal and state cases construing *Heller*, but they provide little guidance in answering this question.<sup>124</sup> Many of these cases have involved challenges to laws criminalizing the ownership of firearms by felons,<sup>125</sup> a prohibition specifically endorsed by *Heller*, albeit in dicta.<sup>126</sup> There have also been challenges to prohibitions on the ownership of certain kinds of firearms, and here Justice Scalia provided some guidelines. He stated that the “arms” protected by the Second Amendment exclude “weapons not typically possessed by law-abiding citizens for lawful purposes, such as short-barreled shotguns.”<sup>127</sup> The rationale for this exception was based on a combination of precedent and history:

We also recognize another important limitation on the right to keep and carry arms. *Miller* said, as we have explained, that the sorts of weapons protected were those “in common use at the time.” We think that limitation is fairly supported by the historical tradition of prohibiting the carrying of “dangerous and unusual weapons.”<sup>128</sup>

Under *Heller*, how would a challenge to an outright ban on Tasers fare? Because the Second Amendment protects at least an individual’s right to self-

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119. D.C. Stat. Ann. § 7-2501.01(7)(D) (2009) (defining a “destructive device as “[a]ny device designed or redesigned, made or remade, or readily converted or restored, and intended to stun or disable a person by means of electric shock”).

120. See *supra* note 71.

121. Compare MICH. COMP. LAWS, § 750.224a (ban on stun gun ownership) with MICH. COMP. LAWS ANN. § 28.425 (licensing regime for concealed carrying of firearms).

122. Delores Flynn, *Sale of Tasers to Public Weighed*, Detroit News, Apr. 8, 2008 (quoting an Air National Guardswoman: “I believe firearms are a good thing, but I’m concerned about potential stray bullets harming someone, especially in my home . . . . If I shot someone and the bullet went through them, then through a wall or window and hit an innocent bystander on the sidewalk, that’s the absolute last thing I’d want to happen trying to defend yourself.”).

123. For purposes of this Article, we assume that the Supreme Court will make the Second Amendment applicable to the States through Fourteenth Amendment “incorporation.” For discussions of the reasons for expecting this outcome, see Nelson Lund, *Anticipating Second Amendment Incorporation: The Role of the Inferior Courts*, 59 Syracuse L. Rev. 185, 196–99 (2008); Nelson Lund, *The Past and Future of the Individual’s Right to Arms*, 31 Ga. L. Rev. 1, 46–55 (1996).

124. See Brannon P. Denning & Glenn H. Reynolds, *Heller, High Water (mark)? Lower Courts and the New Right to Keep and Bear Arms*, 61 Hastings L.J. \_\_\_ (2009).

125. *Id.* at ---.

126. 128 S. Ct. 2783, 2816–17 (2008).

127. *Id.* at 2815–16.

128. *Id.* at 2817 (citations omitted) (quoting *United States v. Miller*, 307 U.S. 174, 179 (1939)).

defense in the home, a blanket ban on Tasers would be suspect. The fact that Tasers were not available in 1791 would not be dispositive, and a court could take note of the fact that Tasers, like handguns, are fairly widely owned by the public today, although not nearly as widely as handguns. Furthermore, such a ban discriminates against an attractive class of persons—those seeking to defend themselves, but saddled with moral misgivings about taking another’s life. Because *Heller* gave significance to the advantage of handguns over shotguns and rifles for physically weak people in defending their homes, it would be easy to read *Heller* as protecting the right of morally scrupulous people to defend their lives with a commonplace nonlethal weapon.<sup>129</sup>

On the other hand, the government could argue that, unlike the District of Columbia prior to *Heller*, it is not completely depriving the public of its right to meaningful self-defense; after all, the public is free to own handguns. Although the Court in *Heller* rejected rational basis review, it failed to specify what level of scrutiny *does* apply.<sup>130</sup> A Taser ban might be defended on the grounds that such devices are unreliable for self-defense in the circumstances most likely to be faced by civilians, and that they are tempting instruments for illegitimate purposes such as torture or responding to insults or trivial threats. In addition, the *Heller* language specifically exempting “dangerous and unusual weapons” from constitutional protection would be helpful in defending a Taser ban. Tasers are less rooted in our historical traditions than firearms, less commonly owned and used today, and perhaps in some ways more horrifying than traditional, albeit more lethal, firearms.

Whatever the outcome, suits challenging Taser bans<sup>131</sup> would be far from legally frivolous, and the road to such a challenge might be paved in this way: stories of alleged Taser misuse, especially by police, re-inspire regulatory efforts to restrict the public’s access to such weapons,<sup>132</sup> which in turn generates increased publicity and popular demand for Tasers, precisely because they are less lethal and for that reason more attractive, at least to some, than traditional firearms.

On balance, we think it is unlikely that there will be a wave of lawsuits seeking to vindicate the public’s right to Tasers. There is no shortage of Americans very motivated to own traditional firearms, but the enthusiasm to

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129. See generally Eugene Volokh, *Nonlethal Self-Defense, Stun Guns, and the Rights to Keep and Bear Arms, Defend Life, and Practice Religion*, 62 *Stan. L. Rev.* (forthcoming 2009–2010), available at <http://www.law.ucla.edu/volokh/stungun.pdf> (exploring issues raised by the Free Exercise of Religion Clause).

130. See 128 S. Ct. at 2817–18 & n.17.

131. Laws forbidding the concealed carrying of Tasers—even in states, such as Connecticut and North Carolina, that permit the concealed carrying of firearms—might also be vulnerable on the basis of similar arguments. CONN. GEN. STAT. §§ 29-38(a), 53-206, 53a-3; N.C. GEN. STAT. § 14-269(a). *Heller*, however, approved laws prohibiting the concealed carrying of firearms, which weakens the case for finding a Second Amendment violation. See 128 S. Ct. at 2809, 2816.

132. For example, a bill was introduced in the Alabama legislature last year to prohibit the sale of electricity-based firearms to the general public. H.B. 175, 2008 Reg. Sess. (Ala. 2008), available at <http://www.legislature.state.al.us/Searchableinstruments/2008RS/Bills/HB175.htm>.

own and use Tasers has been muted. This is probably because those with an interest in arming themselves for self-defense have concluded that Tasers are insufficiently effective and reliable. But this may change with developing technology and dramatic improvements in nonlethal weapons, to which we now turn.

### C. Challenges to Super-Taser and Phaser Bans

As sketched in Part III, we envision dramatic improvements in nonlethal weapons in the future, achieved either incrementally (Super-Tasers) or through technological breakthroughs (Phasers). In Part IV, we suggested that the regulatory environment could run the gamut from lawfulness in all states with few restrictions (the law for pepper spray and Mace today), lawfulness in most states (Tasers today), or a complicated patchwork of state-by-state regulation (the law on concealed carrying of handguns today), to severe federal restrictions (short-barreled shotguns and machine guns) or even a federal ban (nuclear weapons).

In assessing challenges to bans or burdens on the ownership of Super-Tasers and Phasers under *Heller*, the regulatory environment will be an important consideration. *Heller* assumed that weapons fall into two mutually exclusive categories: those that are commonly used by civilians for lawful purposes and those that are “dangerous and unusual.”<sup>133</sup> If Super-Tasers or Phasers are legal in almost all states, then the decision by one city or state to ban the weapons would be open to challenge, assuming the weapons are widely owned in other states.<sup>134</sup>

As the weapons are more heavily regulated, however, the answer may change. If most states ban the weapons, then challenges to such laws would be more problematic. As we move all the way to an outright federal ban, a Second Amendment challenge to bans on Super-Tasers and Phasers might be dead on arrival, precisely because the weapons are unusual. By banning Super-Tasers and Phasers outright, Congress might succeed in ensuring that such weapons are not protected by the Second Amendment. Thus, consistent with the Second Amendment, at least as construed in *Heller*, it would be acceptable for the government to completely deny citizens the right to use the most effective weapons of self-defense then available—weapons that, one can safely assume, police officers would be carrying.

This result highlights a difficulty with the “dangerous and unusual weapons” test. In a circular way, under *Heller*, government prohibition on the ownership of Super-Tasers and Phasers would render constitutional that very prohibition. As one of us has argued elsewhere, *Heller*’s dictum about

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133. 128 S. Ct. at 2817 (“*Miller* said, as we have explained, that the sorts of weapons protected [by the Second Amendment] were those ‘in common use at the time.’ We think that limitation is fairly supported by the historical tradition of prohibiting the carrying of ‘dangerous and unusual weapons.’” (citation omitted) (quoting *United States v. Miller*, 307 U.S. 174, 179 (1939))).

134. What made the D.C. handgun ban in *Heller* so vulnerable was the severity of its imposition on the right to self-defense, combined with the paucity of such restrictions in other jurisdictions.

dangerous and unusual weapons is devoid of support in the sources that Justice Scalia cited.<sup>135</sup> What is worse, it effectively empowers the government to create its own exceptions to the Second Amendment right so long as the Supreme Court waits awhile after the banning of a weapon before it checks to see whether such weapons are in common civilian use. What is worse yet, it makes it very easy for the government to take newly developed technologies outside the scope of the Second Amendment by the simple expedient of banning or restrictively regulating them before they have a chance to come into common civilian use. This defeats the purpose of having a right enumerated in the Constitution in the first place.

The Court, and Justice Scalia, recognized a related and similarly obvious point in *Kyllo*, which rejected the argument that Fourth Amendment rights evaporate when the government adopts novel technologies to invade the privacy of the home.<sup>136</sup> The same point should be recognized in the context of the Second Amendment. *Kyllo*, moreover, suggests one way to do it. *Just as Kyllo adopted a presumption that the police may employ surveillance technologies in widespread use by civilians,<sup>137</sup> so the courts should adopt a presumption that civilians may employ self-defense technologies in widespread use by the police.<sup>138</sup>*

This makes logical sense because police officers and civilians are similarly (though not identically) situated with respect to self-defense. The most common threats are similar and the limits on the legitimate use of force are similar as well. If governments arm police officers with Tasers, as they do, this is a very good indication that these devices are not so “dangerous and unusual” that the government can have good reasons to keep them out of civilian hands. The same will be true with Super-Tasers and Phasers, if and when they are developed and adopted by the police.

The presumption that civilians have a right to use weapons commonly used by the police should be rebuttable by sufficiently strong evidence that a particular device is suitable for police work but not for civilian use. There might also be a correlative presumption against Second Amendment protection for weapons that the police forbidden to use, although this too should be rebuttable, for example in cases where the police are restricted to using expensive weaponry that many civilians cannot afford.

These simple rules will not resolve every case, but we think they can provide a useful starting point for analysis, and could help future courts avoid the kind of unsupported *ipse dixits* with which the *Heller* majority opinion is rife.

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135. See Lund, *supra* note 24.

136. *Kyllo v. United States*, 533 U.S. 27, 35–36 (2001).

137. See *id.* at 34.

138. For a similar suggestion, which focuses on firearms, see the excellent analysis in Michael P. O’Shea, *The Right to Defensive Arms After District of Columbia v. Heller*, 111 W. Va. L. Rev. 349, 384–93 (2009).

## Conclusion

Changing social conditions, including technological developments, create perennial challenges for originalism as a method of constitutional interpretation. The world of the twenty-first century, some have argued, is so dramatically different from the world of the Founders that the Constitution and Bill of Rights provide sparse guidance to jurists and policymakers today.<sup>139</sup> In *Kyllo* and *Heller*, Justice Scalia began by seeking the original meaning of the Fourth and Second Amendments, respectively, and then faced the task of applying that meaning to contemporary conditions that differed significantly from conditions in 1791. In both cases, Justice Scalia's resolution of the constitutional question turned largely on whether certain technologies were in widespread use among the present-day public. In *Kyllo*, the inquiry made logical sense in relation to the purpose of Fourth Amendment protection from unreasonable searches, but in *Heller* the inquiry made little sense in relation to the Second Amendment's purpose of protecting the right to have weapons for self-defense.

Consider this analogy: are images that a legislature considers offensive protected by the First Amendment? Imagine that a court begins by determining that the purpose of the First Amendment is to protect both political and artistic self-expression. On that premise, the court concludes that hard-core pornography is protected because it is wildly popular on the Internet, but that pictures of flag desecration are unprotected because very few people seem interested in creating or viewing them. No such analysis would be taken seriously in a First Amendment case. That, however, is essentially the *Heller* opinion. Handguns are protected by the Second Amendment because they are widely popular with the public notwithstanding their obvious dangerousness, but short-barreled shotguns are unprotected because they are "dangerous and unusual."

What is popular with the public is heavily affected by what Congress and the state legislatures have decided to permit and prohibit, and short-barreled shotguns have been virtually prohibited for the past several decades. Turn now to nonlethal weapons. If federal regulators had preserved their original bans on Tasers, civilians would never have come to own them in the numbers they do today, and Tasers almost certainly would flunk the Second Amendment test created by the *Heller* Court. Likewise, future nonlethal weapons, if they are

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139. See, e.g., Richard A. Posner, *Judicial Autonomy in a Political Environment*, 38 *Ariz. St. L.J.* 1, 7 (2006):

[The Constitution, Bill of Rights and Fourteenth Amendment] reflect the culture and the politics and the moral beliefs of a small pre-industrial and pre-technological nation, a nation different in every way from what it is today. There is no way, whatever "originalists" or "textualists" may say, in which you can take the documents of 1787, 1789, and 1868 and lay them beside some contemporary issue and read off an answer and, if you are criticized as taking sides in a political controversy, respond by saying, "No, I just looked at what the Constitution says, and I looked at what the case before me is about. I just read carefully and came up with an answer to the question presented by the case and anybody who reads carefully and is trained as a lawyer would come up with the same answer." Constitutional law is something that the Supreme Court has created, creates, and uncreates continuously.

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banned at the outset, could be said to be “dangerous and unusual,” at least among civilians, and therefore without any constitutional protection. Here we may be talking about weapons that are superior to modern firearms as weapons of self-defense because they are easier to use, more reliable in disabling aggressors, and less risky to human life.

In anticipating these developments, this Article has highlighted a crucial defect in the *Heller* opinion and also suggested a more sensible approach in applying the Second Amendment to emerging technologies. Under this approach, which is suggested by *Kyllo*, current and future nonlethal weapons should presumptively be available for civilian use if governments regularly arm police officers with similar devices. Because it is a presumption, it is only a starting place for analysis, but it is a starting place that is logically consistent with the purpose of the Second Amendment identified in *Heller*, and it avoids allowing the government to curtail an important constitutional right through a kind of preemptive fiat.