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Civilian Oversight and Developments in Less Lethal Technologies: Weighing Risks and Prioritizing Accountability in Domestic Law Enforcement

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I. INTRODUCTION

The controversial militarization of domestic law enforcement continues. Police agencies that are best understood as serving the public and protecting public safety continue to take on the training and equipment of our military, which focuses instead on information dominance, control, and defeating enemy combatants in war. In recent years, reports have emerged that hundreds of thousands to millions of Americans are entered into terrorist “watchlist” databases by law enforcement and intelligence agencies with no public oversight, many documented mistakes, and no real opportunity for challenging the listing.¹ The last few years have been rife with debate as knowledge emerged that the NSA has indeed collected data on millions of Americans while simultaneously denying that practice.² Finally, we know that the Pentagon granted almost half a billion dollars of military equipment to local law enforcement in 2013 through the Department of Defense (DoD)

* We would like to thank the *Seattle Journal for Social Justice* for their thoughtful comments, suggestions, and outstanding editing team.

¹ AM. CIVIL LIBERTIES UNION, U.S. GOVERNMENT WATCHLISTING: UNFAIR PROCESS AND DEVASTATING CONSEQUENCES 1 (2014), available at https://www.aclu.org/sites/default/files/assets/watchlist_briefing_paper_v3.pdf.

² Andy Greenberg, *Watch Top U.S. Intelligence Officials Repeatedly Deny NSA Spying On Americans Over the Last Year*, FORBES (June 7, 2013, 11:04 PM), <http://www.forbes.com/sites/andygreenberg/2013/06/06/watch-top-u-s-intelligence-officials-repeatedly-deny-nsa-spying-on-americans-over-the-last-year-videos/>.

1033 Program, which permits the transfer of excess supplies and equipment to local law enforcement agencies.³

The effect of the militarization of our police agencies on American lives is palpable. Journalists and watchdog groups write about the “war on terror” coming home because “the weapons that destroyed Afghanistan and Iraq [are making] their way to local law enforcement,” which is “wreaking havoc on innocent American lives.”⁴ Media reports on demonstrations in Ferguson, Missouri, following 18-year-old Michael Brown’s death depicted local law enforcement as an occupying force, with automatic rifles, tear gas, and “riot gear-clad officers . . . standing in front of a mine-resistant ambush protected vehicle, barking commands and launching tear gas into groups of demonstrators and journalists.”⁵ As a result of the public outrage that emerged during and after the Ferguson events, public figures such as Sen. Claire McCaskill (Democrat, Missouri) and Sen. Rand Paul (Republican,

³ Christopher Ingraham, *The Pentagon Gave Nearly a Half a Billion Dollars of Military Gear to Local Law Enforcement Last Year*, WASH. POST (Aug. 14, 2014), <http://www.washingtonpost.com/blogs/wonkblog/wp/2014/08/14/the-pentagon-gave-nearly-half-a-billion-dollars-of-military-gear-to-local-law-enforcement-last-year/>.

Although the White House made the decision to ban law enforcement agencies from obtaining some military equipment such as weaponized aircraft and high-caliber weapons from the U.S. government, the “vast majority of the military-style equipment distributed by 1033 would still be available to local agencies.” Police agencies also can still obtain equipment directly from private manufacturers. Eyder Peralta & David Eads, *White House Ban On Militarized Gear For Police May Mean Little*, NPR (May 21, 2015), <http://www.npr.org/sections/thetwo-way/2015/05/21/407958035/white-house-ban-on-militarized-gear-for-police-may-mean-little>.

⁴ Alex Kane, *Not Just Ferguson: 11 Eye-Opening Facts about America’s Militarized Police Forces*, BILLMOYERS.COM (Aug. 13, 2014), <http://billmoyers.com/2014/08/13/not-just-ferguson-11-eye-opening-facts-about-americas-militarized-police-forces/>; see also AM. CIVIL LIBERTIES UNION, *WAR COMES HOME: THE EXCESSIVE MILITARIZATION OF AMERICAN POLICING 17* (2014), available at <https://www.aclu.org/sites/default/files/assets/jus14-warcomeshome-report-web-rel1.pdf>.

⁵ Jamelle Bouie, *The Militarization of the Police: It’s Dangerous and Wrong to Treat Ferguson, Missouri, as a War Zone*, SLATE (Aug. 13, 2014, 1:15 PM), http://www.slate.com/articles/news_and_politics/politics/2014/08/police_in_ferguson_military_weapons_threaten_protesters.html.

Kentucky) have called for the demilitarization of law enforcement.”⁶ Conservatives have written about “a new era of American policing, where cops increasingly see themselves as soldiers occupying enemy territory,”⁷ while others express concerns about “overkill” by local police forces. Still others underscore that, as of yet, some of those who have come forward expressing these apprehensions are still “not worried enough.”⁸ Note that conservatives are traditionally understood as “tough on crime” rather than “soft on crime.”⁹

Given these developments, we underscore the need for enhanced civilian oversight of domestic law enforcement with rapidly evolving technologies that create tremendous new risks for undetected abuse. Faced with these large-scale shifts toward the militarization of our police agencies, Americans need to grapple with current and anticipated changes in police-civilian relations, but even interested and educated citizens face a sea of bad material posted online.

The purpose of this article is to conduct an analysis of available data on the existing implementation of conducted energy devices (CEDs) in order to highlight risks and potential challenges to ethical policing and civilian

⁶ Catalina Camia, *Sen. Paul on Ferguson: 'Impossible' for Blacks Not to Feel Targeted*, USA TODAY (Aug. 14, 2014, 1:32 PM), <http://onpolitics.usatoday.com/2014/08/14/rand-paul-police-ferguson-race/>.

⁷ Matthew Harwood, *Martial Law Enforcement: How the Excessive Militarization of the Police is Turning Cops into Counterinsurgents*, THE AM. CONSERVATIVE (Aug. 14, 2014), <http://www.theamericanconservative.com/articles/martial-law-enforcement/>.

⁸ Gene Healy, *Just Wait until Ferguson Police Get Federally Funded Drones*, WASH. EXAMINER (Aug. 18, 2014, 5:00 PM), <http://www.washingtonexaminer.com/just-wait-until-ferguson-police-get-federally-funded-drones/article/2552138>.

⁹ Pat Garofalo, *Soft on Crime Part Two: The GOPs Scare Tactics Put Criminal Justice Scare Tactics Put Reform at Risk*, US NEWS & WORLD REP. (Sept. 18, 2015), <http://www.usnews.com/news/the-report/articles/2015/09/18/has-2016-tough-on-crime-talk-already-doomed-criminal-justice-reform>.

oversight with ongoing less lethal (or nonlethal)¹⁰ weapons development and implementation. The analysis relies on a key dataset—the Police Executive Research Forum’s (PERF) 2011 *Evaluation of Less-Lethal Technologies on Police Use-of-Force Outcomes in 13 Sites in the United States, 1992-2007*.¹¹ Based on these findings, we provide a series of recommendations for civilian oversight of law enforcement. For example, going forward, as law enforcement develops weapons and surveillance technologies, members of the public can implement public records requests to obtain data in their domains of interest for auditing and oversight. Also, civilian review boards must have the resources to undertake rigorous training on how to evaluate claims of abuses with new less lethal technologies.

II. GROWING INTEREST IN LESS LETHAL TECHNOLOGIES

In addition to weapons manufacturers and retailers who have an obvious and vested interest in promoting their own products, some experts have begun to advocate for the use of the latest nonlethal weapons in policing. For instance, Eugene O’Donnell, professor at the John Jay College of Criminal Justice, stated recently in the *New York Times* that “the one truly indispensable military technology the police should hurry into service is reliable nonlethal weaponry—like the Pentagon’s so-called pain ray. It is hard to believe that in the year 2014, police officers have to take lives just to enforce the law”; but importantly, he adds that training and “robust oversight” are central to the judicious use of emerging sophisticated

¹⁰ Greg Meyer, *Nonlethal or Less-lethal: Does it Matter?*, POLICEONE.COM (May 1, 2006), <http://www.policeone.com/less-lethal/articles/131840-Nonlethal-or-Less-Lethal-Does-it-matter/>.

¹¹ BRUCE TAYLOR & CHRIS KOPER, *EVALUATION OF LESS-LETHAL TECHNOLOGIES ON POLICE USE-OF-FORCE OUTCOMES IN 13 SITES IN THE UNITED STATES, 1992-2007* ii (2013), available at <http://doi.org/10.3886/ICPSR27561.v1>.

weaponries.¹² Less lethal weapons are designed to (1) “incapacitate people or disable equipment,” (2) “discriminate and not cause unnecessary suffering,” (3) have effects that are “temporary and reversible,” and (4) “provide alternatives to, or raise the threshold for, use of lethal force.”¹³ According to the research and development arm of the Department of Justice, the National Institute of Justice (NIJ), there are seven categories of less lethal technologies: (1) CEDs, (2) directed energy devices, (3) chemicals, (4) distraction tools, (5) vehicle-stopping technology, (6) barriers, and (7) blunt force, with some manufacturers integrating numerous effects into a single device.¹⁴ Proponents who argue that less lethal technologies are preferable to lethal weapons for deployment in police-civilian interactions because they can save lives and minimize injuries to officers and suspects underscore an important point. But, these weapons are also accompanied by risks that should be evaluated.

Through efforts of the DoD’s Joint Nonlethal Weapons Program,¹⁵ the NIJ,¹⁶ and private contractors such as Raytheon Company,¹⁷ the military

¹² Eugene O’Donnell, *Military Training and Technology May Actually Cut Risk*, N.Y. TIMES (Aug. 28, 2014, 6:20 PM),

<http://www.nytimes.com/roomfordebate/2014/08/14/are-police-forces-excessively-armed/military-training-and-technology-for-police-may-actually-cut-risk>.

¹³ NICK LEWER & NEIL DAVISON, NON-LETHAL TECHNOLOGIES: AN OVERVIEW, DISARMAMENT FORUM 37 (2005), available at http://www.peacepalacelibrary.nl/ebooks/files/UNIDIR_pdf-art22.

¹⁴ *Types of Less-Lethal Devices*, NAT’L INST. OF JUST., <http://www.nij.gov/topics/technology/less-lethal/pages/types.aspx> (last visited Aug. 9, 2015).

¹⁵ U.S. DEP’T OF DEFENSE, NON-LETHAL WEAPONS ANNUAL REVIEW 1, 14 (2013), available at http://jnlwp.defense.gov/Portals/50/Documents/Press_Room/Annual_Reviews_Reports/2013/DoD_Non-Lethal_Weapons_Program_Annual_Review_11.19.2012_HTML_format_v1.pdf.

¹⁶ David Hambling, *Police Toy with ‘Less Lethal’ Weapons*, NEW SCIENTIST (May 2, 2005), <https://www.newscientist.com/article/dn7326-police-toy-with-less-lethal-weapons/#bx249758B1>.

¹⁷ *Research and Markets: North American Non-Lethal Weapons Market by Type, by Technology, by Application, by Country Analysis and Forecast (2014-2019)*, BUS. WIRE

and our law enforcement agencies will have access to increasingly sophisticated energy weapons that can be fired at targets from a distance. New models of CEDs (often called by the brand name of Taser) have been developed so that they no longer need wires and barbs to stun a suspect.¹⁸ The Active Denial System (ADS) is a less lethal weapons technology able to target individuals with millimeter wave-directed energy to deter potential adversaries who would feel intense heat and pain sensations.¹⁹ Domestic law enforcement has expressed some interest in this technology. In 2010, the Los Angeles County Sheriff's Department reported an interest in using a nonlethal, directed energy Assault Intervention Device to stop or lessen the likelihood of assaults among inmates.²⁰ Although often depicted as vehicle-mounted weapons, the NIJ has worked with Raytheon on hand-held equivalents of the military's ADS for domestic law enforcement.²¹ Similarly, the Long Range Acoustic Device (LRAD) is a weapon that achieves sound projection from a distance by sending focused sound waves to issue authoritative commands or create powerful and painful deterrent

(Apr. 24, 2015, 1:46 PM), *available at*

http://www.businesswire.com/news/home/20150424005787/en/Research-Markets-North-American-Non-Lethal-Weapons-Market#.VcExyvlp_w0. "The key companies operating in this market include NonLethal Technologies, Inc. (U.S.), TASER International, Inc. (U.S.), Raytheon Company (U.S.), Lamperd less Lethal Inc. (Canada), LRAD Corporation (U.S.), and AMTEC Less-Lethal Systems, Inc. (U.S.)." *Id.*

¹⁸ David Hambling, *Wireless Taser: Whole New Kind of Weapon*, WIRED (July 6, 2007, 6:58 AM), <http://www.wired.com/2007/07/taser-goes-wire/>.

¹⁹ WEAPONS & PROTECTIVE SYS. TECH. CTR., A GUIDEBOOK FOR LESS-LETHAL DEVICES: PLANNING FOR, SELECTING, AND IMPLEMENTING TECHNOLOGY SOLUTIONS 18 (2010), *available at* [https://www.justnet.org/pdf/WPSTC-GUIDE-FINAL-\(2010.05.07\)-COMPLETE.pdf](https://www.justnet.org/pdf/WPSTC-GUIDE-FINAL-(2010.05.07)-COMPLETE.pdf).

²⁰ Thomas Watkins, *LA Authorities Plan to Use Heat-Beam Ray in Castaic Jail*, L.A. DAILY NEWS (Sept. 25, 2012, 12:01 AM), <http://www.dailynews.com/20100826/la-authorities-plan-to-use-heat-beam-ray-in-castaic-jail>.

²¹ David Hambling, *Infra-Red Pain Beams For Police, Military*, WIRED (Dec. 24, 2008, 9:28 AM), <http://www.wired.com/2008/12/pain-beams-go-i/>.

tones when directed at intended targets.²² The San Diego County Sheriff's Department procured an LRAD 500X in 2008, and it notes that one of the dangers is that the "LRAD can cause temporary or permanent hearing damage if operated at the maximum volume and if persons are within 75 meters of the front of the device."²³

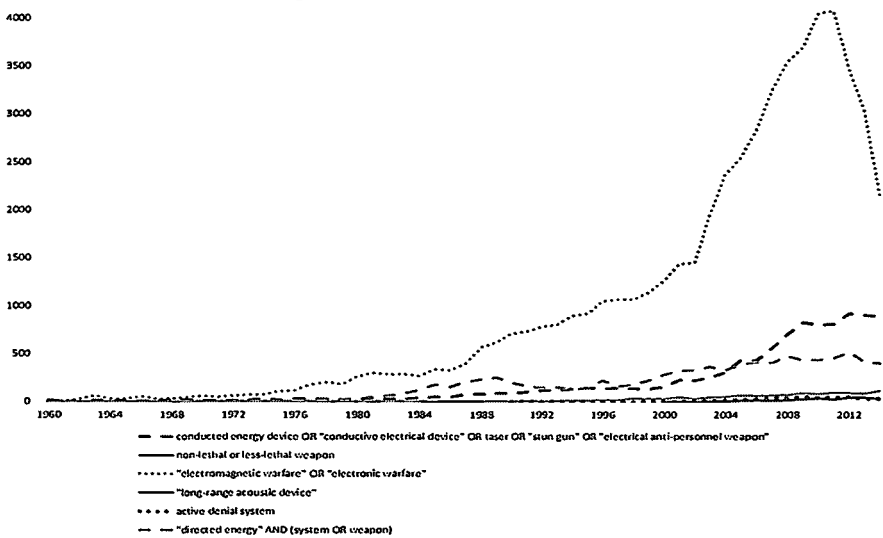
More generally, interest in the development of and reporting on less lethal weapons and other technologies across the electromagnetic spectrum—which is omnipresent in our everyday lives, including via radio waves, microwaves, ultraviolet, X-rays, gamma rays—and across the acoustic spectrum, has grown substantially over the last decade in the scholarly community. We used Google Scholar (a search engine that enables a broad search of scholarly literature including academic articles, books, abstracts, and court opinions) to assess research trends. Figure 1 charts the growth in counts of articles from Google Scholar for selected search phrases within this domain. Scholarly interest in directed energy weapons peaked in 2012 at 518 article counts but remained high in 2014 at 399. Interest in the ADS peaked in 2009 at 56 counts (33 articles for 2014). Interest in the LRAD peaked in 2012 with 45 counts (33 articles for 2014). Interest in less lethal, or nonlethal weapons broadly, has also grown steadily over time, with 29 articles in 2000 and 115 articles in 2014. CEDs comprise one of the weapons categories with greatest sustained interest over time, with over 100 articles in 1991, 229 in 2001, 203 in 2004, peaking at 920 in 2012, and remaining high in 2014 with 886 scholarly articles. The most striking trend is that for the growing industry that encompasses nonlethal weaponry, vis-a-vis the electromagnetic spectrum. Searched as

²² Natasha Lennard, *Chicago Cops' New Weapons*, SALON (May 14, 2012, 8:54 AM), http://www.salon.com/2012/05/14/chicago_cops_new_weapon/.

²³ SAN DIEGO COUNTY SHERIFF'S DEP'T, LONG RANGE ACOUSTIC DEVICE (LRAD) (n.d.), available at <http://www.sdsheriff.net/newsroom/lrad.pdf>.

“electromagnetic warfare” or “electronic warfare”²⁴ in Google Scholar, interest was high in 1996 with 1,050 article counts, peaking in 2010 with 4,050 article counts, and remaining high in 2014 with 2,160 article counts. This is a growing industry, and there are over one thousand jobs posted on indeed.com when “electromagnetic warfare” and “United States” are entered into the fields for keywords and location (as of May 1, 2015).

Figure 1. Comparing Growth in Counts of Articles from Google Scholar for Less Lethal Technologies.²⁵



²⁴ CHAIRMAN OF THE JOINT CHIEFS OF STAFF (CJCS) - ARMED FORCES OF THE UNITED STATES OF AMERICA, JOINT PUBLICATION 3-13.1 ELECTRONIC WARFARE v (2007), available at <http://fas.org/irp/doddir/dod/jp3-13-1.pdf>. Electronic warfare “includes three major subdivisions: electronic attack (EA), electronic protection (EP), and electronic warfare support (ES). EA involves the use of EM energy, directed energy, or antiradiation weapons to attack personnel, facilities, or equipment with the intent of degrading, neutralizing, or destroying enemy combat capability and is considered a form of fires.” *Id.*

²⁵ Source: Figure shows counts of returns on Google Scholar search (as of May 10, 2015 on scholar.google.com) with a search for articles by year and by the search terms provided in the legend.

III. TACKLING THE PROBLEMS WITH LESS LETHAL WEAPONS

While the use of less lethal weapons may have advantages in policing, there are caveats to consider by all stakeholders moving forward. These new weapons pose challenges to the police oversight community because those that are based on the electromagnetic spectrum, such as the ADS, are silent and invisible to the naked eye.²⁶ Yet they rely on pain compliance. A typical response to ADS targeting is, as demonstrated by one test subject, an “intolerable heating sensation” with an immediate desire to move away from the beam.²⁷ Oversight professionals may find it difficult to monitor and audit how frequently, at what intensity, and at which targets these weapons are aimed and discharged; therefore, the features of these weapons call attention to substantial risks for undetected abuse.

Although we would be correct to observe that there are moral, rational, and even heroic individuals among us—notably in fields with higher risk, such as policing²⁸ and military service²⁹—we must not be so naive as to

²⁶ NASA Science Mission Directorate, *Visible Light*, NASA, http://missionscience.nasa.gov/ems/09_visiblelight.html (last visited Aug. 12, 2015). “All electromagnetic radiation is light, but we can only see a small portion of this radiation—the portion we call visible light. Cone-shaped cells in our eyes act as receivers tuned to the wavelengths in this narrow band of the spectrum. Other portions of the spectrum have wavelengths too large or too small and energetic for the biological limitations of our perception.” *Id.*

²⁷ Aaron Smith, *Wanted at Police Departments: Guns That Don't Kill*, CNN.COM (Feb. 16, 2015), <http://money.cnn.com/2015/02/16/technology/less-lethal-weapons/>.

²⁸ For poignant examples from recent years, see *Celebrating 15 cops who saved lives in 2014*, POLICEONE.COM (Dec. 15, 2014), <http://www.policeone.com/police-heroes/articles/7982463-Celebrating-15-cops-who-saved-lives-in-2014/>; *The '12 Knights' of Christmas 2013*, POLICEONE.COM (Dec. 24, 2013), <http://www.policeone.com/Officer-Safety/articles/6689805-The-12-Knights-of-Christmas-2013/>; *2012 in Review: The '12 Knights of Christmas' 2012*, POLICEONE.COM (Dec. 10, 2012), <http://www.policeone.com/patrol-issues/articles/6059818-2012-in-Review-The-12-Knights-of-Christmas-2012/>; Michael Konatsotis & David Roussine, *Hero Cops Save Unconscious Baby's Life*, ASSOCIATED PRESS (Mar. 2, 2014, 10:00 AM), http://www.huffingtonpost.com/2014/03/02/nypd-saves-baby_n_4884928.html.

ignore scholarship with regard to variation in personality traits. The latest research in this domain has found that subclinical sadism is much more prevalent than previously understood, with “those who enjoy inflicting at least moderate pain on others, directly or vicariously, mingl[ing] with us daily.”³⁰ In a seminal study in 2013, dark personalities, such as sadists, psychopaths, narcissists, and those with low empathy, all aggressed against innocents; but so-called everyday sadists are distinguished by how much they enjoy cruelty or harming others.³¹ Given the opportunity to blast an opponent with white noise who was guaranteed not to retaliate, “sadists were also the only dark personalities willing to work (i.e., expend time and energy) to hurt an innocent person,” and “only sadists increased the intensity of their attack once they realized that the innocent person would not fight back.”³² Although this work should not be taken to imply that law enforcement personnel are dominated by everyday sadists, Professor Delroy Paulhus of the University of British Columbia does note that everyday sadists may be drawn to jobs in law enforcement and the military because

²⁹ See the following for Medal of Honor Recipients, although there are many unsung military heroes not on the list. *Medal of Honor Recipients*, U.S. ARMY CTR. OF MIL. HIST., <http://www.history.army.mil/moh/> (last visited Aug. 12, 2015). “The President, in the name of Congress, has awarded more than 3,400 Medals of Honor to our nation’s bravest Soldiers, Sailors, Airmen, Marines, and Coast Guardsmen since the decoration’s creation in 1861.” *Id.*; Rebecca Gordon, *These 6 Military Heroes Spoke Out Against Torture After 9/11: Their Choices Prove that Bush, Cheney, & Co. Could Have Said No as Well*, MOTHER JONES (Feb. 10, 2015 8:29 PM), <http://www.motherjones.com/politics/2015/02/military-heroes-no-torture-bush-cheney>. “Some of those who rejected torture, like CIA official John Kiriakou and an as-yet-unnamed Navy nurse, directly refused to practice it. Some risked reputations and careers to let the people of this country know what their government was doing. Sometimes an entire agency, like the FBI, refused to be involved in torture. I’d like to introduce you to six of these heroes . . .” *Id.*

³⁰ Jan Hoffman, ‘Everyday Sadists’ Among Us, N.Y. TIMES (Sept. 16, 2013, 4:50 PM), http://well.blogs.nytimes.com/2013/09/16/everyday-sadists-among-us/?emc=edit_tnt_20130917&ntemail0=y&r=3&.

³¹ Erin E. Buckels et al., *Behavioral Confirmation of Everyday Sadism*, PSYCHOLOGICAL SCI. 1, 7 (2013).

³² *Id.* at 7.

they can harm others based on the pretext of a legitimate position.³³ This work has gained the attention of the military, which wants to understand why some people abuse their positions and potentially weed out dark personalities before they are hired.³⁴

In cases where police and military agency officials do abuse their powers, some might argue that we can rely on whistleblowers to spot and notify the proper authorities of wrongdoing. But in reality, we must not rely primarily on those courageous enough to step forward and to report wrongdoing. As demonstrated by recent reports, substantial institutional disincentives to whistleblowing exist.³⁵ The Government Accountability Office found FBI employees have only a limited list of officials to which whistleblowers can make protected complaints about waste, fraud, or governmental abuse (in order to be protected from retaliation by senior management).³⁶ Additionally, FBI employees found the process “confusing” and

³³ Douglas T. Kenrick, *The Four “Dark Personality” Traits: Distinguishing Psychopaths, Narcissists, Machiavellians, and Everyday Sadists*, PSYCHOLOGY TODAY (Dec. 18, 2014), <https://www.psychologytoday.com/blog/sex-murder-and-the-meaning-life/201412/the-four-dark-personality-traits>.

³⁴ David Robson, *Psychology: The Man Who Studies Everyday Evil*, BBC.COM (Jan. 30, 2015), <http://www.bbc.com/future/story/20150130-the-man-who-studies-evil>.

³⁵ Kelly Riddell, *FBI Hostile to Whistleblowers and Must Change Culture*, *Lawmakers Say*, WASH. TIMES (Mar. 4, 2015), <http://www.washingtontimes.com/news/2015/mar/4/fbi-must-fix-whistleblower-retaliation-culture-/?page=all>. In March of 2015, in a hearing evaluating how the FBI handles its whistleblower cases, both Democrat and Republican lawmakers pressured the FBI to change a culture and a structure “from top to bottom” that were seen as “hostile” to whistleblowers. *Id.*

³⁶ Joe Davidson, *Report Says Procedures Put A Chilling Effect on Potential FBI Whistleblowers*, WASH. POST (Mar. 3, 2015), http://www.washingtonpost.com/politics/federal_government/report-says-procedures-put-a-chilling-effect-on-potential-fbi-whistleblowers/2015/03/03/160b8708-c1cf-11e4-9271-610273846239_story.html?wpisrc=nl_headlines&wpm=1.

“burdensome.”³⁷ Sen. Charles Grassley, a Republican from Iowa and the Chairman of the Judiciary Committee, said, “many who come to me express fear of reprisal for raising the alarm and are even unclear of their rights as whistleblowers.”³⁸ Recently, an FBI whistleblower who investigates counterterrorism cases received an email response from an attorney in the Office of Integrity and Compliance stating, “I’m sure you know, though, this does not guarantee that you will not be retaliated against, even though retaliation/reprisal for making protected disclosures is illegal.”³⁹ Furthermore, Stephen Kohn of the National Whistleblowers Center observed, “the FBI has placed its bureaucratic culture ahead of protecting Americans from terrorism” and “allowed retaliatory animus and their cultural hostility toward whistleblowers to compromise the counterterrorism program.”⁴⁰ The combination of dark personality traits, institutional features that are not conducive to whistleblowing, and the development of an array of difficult-to-detect less lethal weapons form a cogent basis for enhanced and rigorous oversight.

Those arguments aside, it is important to note that one does not need to be a sadist to harm an innocent subject. In his classic study of obedience at Yale University, Stanley Milgram showed that, by simply shifting to an agentic state wherein the subject rationalizes that he or she is simply following the orders of an authority figure, a surprising number of participants administered a dangerous volt of energy to innocent persons

³⁷ Carrie Johnson and Evie Stone, *A Decade after Blowing The Whistle on The FBI, Vindication*, NPR.ORG (Apr. 15, 2015, 4:03 AM), <http://www.npr.org/2015/04/15/398518857/9-years-after-blowing-the-whistle-on-the-fbi-he-s-been-vindicated>.

³⁸ Robson, *supra* note 34.

³⁹ Kelly Riddell, *FBI Email Warns Whistleblower of Retaliation if Surveillance Program Concerns Reported*, WASH. TIMES (Mar. 3, 2015), <http://www.washingtontimes.com/news/2015/mar/3/fbi-email-warns-whistleblower-of-retaliation-if-su/?page=all>.

⁴⁰ *Id.*

(those who took on the role of learners).⁴¹ In all, 26 of 40 participants who assumed the role of teachers obeyed until the end, administering 450 volts of energy to the assigned learner.⁴² Central to our understanding of oversight for the implementation of directed energy weapons are the varying proximity conditions. When the teacher and learner were located next to one another in the same room or especially when the teacher was ordered to place the learner's hand on the shock plate, the close interaction between teacher and learner was associated with less compliance. When the teacher and learner were located in separate rooms, teachers were more likely to shock the learners.⁴³ This has clear implications for the willingness of police and military officials (who work within hierarchical, authority-driven institutions) to fire directed energy weapons against the innocent, since these can be aimed and discharged at targets from a distance. Milgram's study is "virtually impossible"⁴⁴ to replicate ethically in the United States today due to modern regulations that provide for stronger human subjects protections.⁴⁵ Milgram undertook his research program in

⁴¹ STANLEY MILGRAM, OBEEDIENCE TO AUTHORITY: AN EXPERIMENTAL VIEW 145–146 (1974). Milgram stated, "The most far-reaching consequence of the agentic shift is that a man feels responsible to the authority directing him but feels no responsibility for the content of the actions that the authority prescribes." *Id.* Note that the learners were actually actors or confederates in the research and therefore, they simulated reactions "as if" they were truly being shocked. Milgram's goal mainly was to study the teacher. *Id.*

⁴² Robert Levine, *Milgram's Progress*, AM. SCIENTIST (2004), <http://www.americanscientist.org/bookshelf/pub/milgrams-progress>.

⁴³ *Id.* at 35.

⁴⁴ INT'L ENCYCLOPEDIA OF THE SOC. SCIS. 2 (2nd ed. 2007), available at <http://www.stanleymilgram.com/pdf/EncyclSocSci.pdf>.

⁴⁵ Dep't of Energy, *Human Subjects Resources: Protecting Workers Who Are Human Research Subjects*, PROTECTING HUM. SUBJECTS (Nov. 12, 2013), <http://humansubjects.energy.gov/doe-resources/worker-brochure.htm>. "Since ancient times, a doctor's first commitment to patients is 'to do no harm.' The same principle applies to research—medical and other types—with human subjects. Protecting research subjects from physical harm seems like an obvious requirement. But studies with human subjects must also include protections from psychological, social, or economic harm." *Id.*; see also Protection of Human Subjects, 45 C.F.R. § 46 (2009); Dep't of Health and Hum. Serv., *What is Informed Consent and When, Why, and How Must it be Obtained*,

order to understand “why tens of thousands of ordinary German citizens willingly provided the manpower to carry out a massive killing program.”⁴⁶ As to whether Milgram’s main findings of destructive obedience (how far an individual would go in following orders to harm an innocent individual)⁴⁷ holds up over time given contextual and generational change, a review of scholarship in this domain has found that “rates of obedience show no systematic change over time.”⁴⁸

As with other weapons, less lethal weapons are supposed to be utilized judiciously in principle but in practice there are many exceptions. Amnesty International and the Omega Research Foundation have documented how “law enforcement officials commit a wide range of human rights violations using such equipment—including torture and other ill-treatment in custody, as well as excessive, arbitrary and unnecessary use of force against demonstrators.”⁴⁹ With the variety of less lethal weapons available, one or more unscrupulous or morally disengaged officers could wreck a target’s life. Using directed energy weapons, an unfortunate target’s means of work, transportation, communication, and safety could be affected. For instance, directed energy weapons could be used to fry the electronics of a target,⁵⁰ which would cause a target’s computer, car, cell phone, surveillance cameras, and alarm system to stop working. With next-generation less lethal

HHS.GOV, <http://www.hhs.gov/ohrp/policy/faq/informed-consent/what-is-informed-consent.html> (last visited Aug. 9, 2015).

⁴⁶ Levine, *supra* note 42.

⁴⁷ *Id.*

⁴⁸ Thomas Blass, *The Milgram Paradigm After 35 Years: Some Things We Now Know About Obedience to Authority*, 29 J. APPLIED SOC. PSYCH. 955, 972 (1999).

⁴⁹ *The Human Rights Impact of Less Lethal Weapons and Other Law Enforcement Equipment*, AMNESTY INT’L (Apr. 12, 2015), <http://www.amnestyusa.org/research/reports/the-human-rights-impact-of-less-lethal-weapons-and-other-law-enforcement-equipment>.

⁵⁰ Kelsey D. Atherton, *The U.S. Navy Wants Nonlethal Weapons: When You Absolutely, Definitely, Need an Option that Isn’t Killing Someone*, POPULAR SCI. (July 2, 2014), <http://www.popsci.com/article/technology/us-navy-wants-nonlethal-weapons>.

technology, even the sanctity of the target's home could be made extremely uncomfortable.⁵¹ With respect to the latter, in 2009, the Joint Nonlethal Weapons Directorate sought proposals for “clear-a-space technology” or “non-lethal weapons that provide the capability to clear targeted personnel . . . and provide the capability to disable individuals within confined/indoor spaces.”⁵²

Portable and precise nonlethal weapons may pose risks for additional abuse. The Personnel Halting and Stimulation Response (PHaSR), which was funded by the NIJ and the Joint Non-Lethal Weapons Directorate, can be operated by a single individual and is a “rifle-sized laser weapon system that uses two non-lethal laser wavelengths to deter, prevent, or mitigate an adversary’s effectiveness.”⁵³ A hand-held version of the ADS that the NIJ worked with Raytheon to develop had a desired range of about 100 feet, with a small beam of just a few inches that would still repel an individual.⁵⁴ Whatever the details of new portable weapons as they reach production, from an outside observer’s perspective, the potential for undetected abuse increases with smaller, more portable versions, as these reduce the potential to spot large vehicle-mounted ADS equipment in a given area. Also, since the beam of the portable version that has been in development is more precise, it could be fired at a targeted person without hitting others around him. We must find mechanisms to ensure that each use of force against selected targets is reported. Unreported firing of silent, invisible, but painful

⁵¹ *Id.*

⁵² *Joint Non-Lethal Weapons Directorate Seeks Clear-A-Space Proposals*, KIRTLAND AIR FORCE BASE (Nov. 13, 2009), <http://www.kirtland.af.mil/news/story.asp?id=123177575>.

⁵³ U.S. AIR FORCE RES. LAB., PERSONNEL HALTING AND STIMULATION RESPONSE (PHASR) (2006), *available at* <http://www.kirtland.af.mil/shared/media/document/AFD-070404-043.pdf>.

⁵⁴ David Hambling *U.S. Eyes 'Pain Beam' for Home Security, Law Enforcement*, WIRED.COM (Dec. 10, 2007), http://archive.wired.com/politics/security/news/2007/12/pain_beam?currentPage=2.

weapons against targets would be the foundation for abuse (especially in circumstances with prolonged exposure through repeated firing of the weapon against a particular target and/or at higher levels of intensity). An obviously problematic situation is one where the target reports truthfully that such a weapon has hit him or her repeatedly. Those around would meet such a claim with incredulity, since they were present but did not share in the same experience.

Torture has been a substantial part of our national discussion in recent years, and critics of less lethal weapons highlight the possibility for the torture of targets.⁵⁵ Security expert Steve Wright at Leeds Metropolitan University describes the new weapons as “torture at the touch of a button.”⁵⁶ A prominent example of torture that has been a part of our national conversation in recent years came to the fore when we learned of details of the CIA’s enhanced interrogation tactics in the Senate Intelligence Committee report. After the release of the CIA torture report, Sen. Diane Feinstein (Democrat, California) admonished that “the major lesson of this report is that regardless of the pressures and the need to act, the intelligence community’s actions must always reflect who we are as a nation, and

⁵⁵ Brian Martin & Steve Wright, *Countershock: Mobilizing Resistance to Electroshock Weapons*, 3 MED., CONFLICT AND SURVIVAL 205, 205 (2003). “Electroshock, stun and restraint technologies are often used for torture and as tools of repression.” *Id.*; see also *The Legal Prohibition Against Torture*, HUM. RTS. WATCH (June 1, 2004), <https://www.hrw.org/news/2003/03/11/legal-prohibition-against-torture>. “The prohibition against torture is firmly embedded in customary international law, international treaties signed by the United States, and in U.S. law. As the U.S. Department of State has noted, the ‘United States has long been a vigorous supporter of the international fight against torture . . . Every unit of government at every level within the United States is committed, by law as well as by policy, to the protection of the individual’s life, liberty and physical integrity.’” *Id.*

⁵⁶ David Hambling, *U.S. police could get ‘pain beam’ weapons*, NEW SCIENTIST (Dec. 24, 2008), <https://www.newscientist.com/article/dn16339-us-police-could-get-pain-beam-weapons/>. The article also quotes Amnesty International’s arms control researcher Helen Hughes as stating, “We have grave concerns about the deployment and use of any such devices, which have the potential to be used for torture or other ill treatment.” *Id.*

adhere to our laws and standards.”⁵⁷ Although those who defend torture do so by defining exceptional circumstances, such as when our “deepest values and our collective survival are in imminent danger,”⁵⁸ the unlawful use of less lethal technologies to torture in interrogations and to elicit false confessions from innocent individuals would not be new to our national history. For example, former police official Jon Burge is perhaps the most famous alleged torturer in American history. Burge was a commander in the Chicago Police Department and is alleged to have tortured as many as 120 African American men on Chicago’s South Side between 1972 and 1991.⁵⁹ Whenever he needed a confession, “he would walk into the interrogation room and set down a little black box, his alleged victims would later tell prosecutors . . . he would crank his little black box and listen to the screams of pain as electricity coursed through the suspect’s body.”⁶⁰ Burge was convicted of perjury and obstruction of justice in 2010 when he stated that he had never tortured suspects.⁶¹ In May of 2015, Chicago agreed to pay a total of up to \$5.5 million to dozens of people tortured by the city’s police in the 1970s and 1980s,” although Chicago and Cook County previously paid approximately \$100 million in Burge-related lawsuits.⁶²

The development of new, less lethal weapons that inflict pain from a distance without leaving marks raises concerns about more opportunities for

⁵⁷ Carl Hulse, *For Dianne Feinstein, Torture Report’s Release Is a Signal Moment*, N.Y. TIMES (Dec. 9, 2014), <http://www.nytimes.com/2014/12/10/us/politics/for-dianne-feinstein-cia-torture-reports-release-is-a-signal-moment.html>.

⁵⁸ MICHAEL WALZER, ARGUING ABOUT WAR 33 (2004).

⁵⁹ Michael Miller, *Cop Accused of Brutally Torturing Black Suspects Costs Chicago \$5.5 million*, WASH. POST (Apr. 15, 2015), <http://www.washingtonpost.com/news/morning-mix/wp/2015/04/15/closing-the-book-on-jon-burge-chicago-cop-accused-of-brutally-torturing-african-american-suspects/>.

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² Fiona Ortiz, *Chicago council approves reparations for police torture victims*, REUTERS.COM (May 6, 2015, 5:22 PM), <http://www.reuters.com/article/2015/05/06/us-usa-police-chicago-idUSKBN0NR1YA20150506>.

undetected abuse and raises questions about long-term health effects.⁶³ Repeated abuse of less lethal weapons raises questions, not just about psychological and physical torture, but also about basic human effects and safety issues. Although the Air Force observes that the ADS is “not radioactive, does not cause cancer or infertility, and can only be lethal if the energy beam is ‘sustained and prolonged many times,’”⁶⁴ it is the improperly prolonged and repeated firing against an individual that forms the basis for many concerns. Furthermore, as an expert in less lethal weapons, Dr. Jürgen Altmann of University of Dortmund, observed that real life situations could deviate from the 15-second breaks between exposures that test subjects were permitted.⁶⁵ He noted that the ADS

[p]rovides the technical possibility to produce burns of second and third degree . . . Second- and third-degree burns covering more than 20% of the body surface are potentially life-threatening—due to toxic tissue-decay products and increased sensitivity to infection—and require intensive care in a specialized unit. . . . Without a technical device that reliably prevents re-triggering on the same subject, the ADS has a potential to produce permanent injury or death.⁶⁶

Previously, national security reporter Sharon Weinberger wrote that the ADS

⁶³ TORTURE AND STATE VIOLENCE IN THE UNITED STATES: A SHORT DOCUMENTARY HISTORY 255 (Robert M. Pallitto ed., 2011). Torture that leaves no marks on the body is consistent with what scholars call “clean torture,” which gained favor in democratic societies where constituents have voice and established norms for human rights: “As monitoring emerges, states continue to torture, but they employ methods that leave no evidence on the body.” *Id.* at 2.

⁶⁴ Smith, *supra* note 27.

⁶⁵ Ed Cumming, *The Active Denial System: the weapon that's a hot topic*, THE TELEGRAPH (July 20, 2010, 11:27 AM), <http://www.telegraph.co.uk/news/science/7900117/The-Active-Denial-System-the-weapon-thats-a-hot-topic.html>.

⁶⁶ *Id.*

[i]s specifically designed not to cause any injuries, such as burns. There have been several incidents of blistering, however, and the most serious accident took place [in April of 2008], when the Air Force revealed that an airman taking part in a test of ADS had been injured severely enough to be treated at a burn center.

The injury was due in no small part to a series of operator errors and missing safety equipment.⁶⁷

Other risks are related to the suppression of dissent as well as disproportionate use against certain social and demographic categories. In an article for *Harper's Magazine*, one writer examined the development of less lethal technologies and wrote that, "as outlined in many documents, some of them only recently declassified, U.S. policymakers have long understood themselves to be engaged in an active arms race with protesters both at home and abroad"; however, with the growth of mass communications came the exposure of violence, and "governments have realized that the public's perception of injury and bloodshed must be carefully managed."⁶⁸ Other experts warn, "emerging non-lethal technologies offer an increasing opportunity for the suppression of civil dissent and control of populations—these are sometimes referred to as the 'technologies of political control.'"⁶⁹ Less lethal weapons like the ADS and LRAD, then, can be used as flexible tools of political control while undermining oversight and accountability. During the Ferguson demonstrations, for example, members of the media asked,

What could possibly justify police 'red-dotting' peaceful protesters with laser sights, or an attempted head-shot, with a tear gas canister, at a man standing in his own yard, insisting, 'this [is] my

⁶⁷ Sharon Weinberger, *Pain Ray Test Subjects Exposed to 'Unconscionable Risks'*, WIRED.COM (Oct. 10, 2008), <http://www.wired.com/2008/10/pain-ray-accide/>.

⁶⁸ Ando Arike, *The Soft-Kill Solution: New Frontiers in Pain Compliance*, HARPER'S MAG. (Mar. 2010), <http://harpers.org/archive/2010/03/the-soft-kill-solution/>.

⁶⁹ LEWER & DAVISON, *supra* note 13.

property!?'? Police fumigate a news crew and take down their cameras—then chase off the other journalists filming the assault.⁷⁰

If directed energy weapons were used against protesters, witnesses, and journalists in Ferguson, the American public would not have had visible data for evaluations of potential abuse incidents. A similar argument is made about what would have happened if the University of California at Davis Police Department were to have deployed the ADS against a non-violent group of young college students sitting together in a line on the sidewalk with linked arms during Occupy Wall Street demonstrations in the fall of 2011, instead of their controversial use of pepper spray.⁷¹

We must guard against the risks of excessive, unnecessary uses of force with less lethal technology—just as we do with lethal force—perhaps especially because, unlike traditional gunfire with bullets, casings, and entry-exit sites, nonlethal weapons are difficult to detect with traditional forensic methods. How can stakeholders identify and evaluate potential abuses of power in the evolving frame of new energy weapon technologies? We can learn from the case of existing CED implementation. Although CED technology is different from that of ADS and other less lethal weapons, it is similarly subject to concerns about abuse, auditing, and health effects on human targets. Technology based on energy that can be fired at targets from a distance often does not leave markings behind on the body of the target. “Human rights groups say that equipping police with

⁷⁰ Healy, *supra* note 8.

⁷¹ Brad Turner, *Cooking Protestors Alive: The Excessive-Force Implications of the Active Denial System*, 11 DUKE L. & TECH. REV. 332, 343 (2007). “The ADS works invisibly and inaudibly . . . instead of watching imagery reminiscent of Mohatma Ghandi or the great nonviolent protests of the civil rights era, television and internet viewers will see what looks to be a strange, perhaps even humorous scene, where one minute student protestors are standing their ground and the next they are scattering for no discernible reason.” *Id.* at 355.

such weapons would add to the problems posed by existing ‘non-lethals’ such as Tasers.”⁷²

The rest of this article is structured as follows: having already discussed advances in less lethal technologies, we analyze current implementations with CEDs and conclude with recommendations as weapons and surveillance technologies continue to evolve. We use the case of CEDs, which have been deployed in law enforcement agencies across the United States, in order to weigh the risks and advantages of less lethal energy weapons. To preview the result, we observe that CEDs are often used against suspects who pose no imminent danger to public safety including suspects who are passive or are not resistant, suspects who demonstrate only verbal resistance, and fleeing suspects. When too broad, CED deployment unnecessarily subjects targets to pain and risk for injury as well as violations of their constitutional rights. Finally, we advance a number of recommendations for civilian oversight of law enforcement given the risks and advantages of rapidly developing nonlethal technologies. With more complete knowledge of local law enforcement practices, stakeholders will be better able to design policies that are appropriate to technological advances and the increasing militarization of our police.

IV. A CASE STUDY OF LESS LETHAL WEAPONS: CONDUCTED ENERGY WEAPONS OR TASERS

Controversy has grown alongside increased CED purchases. CEDs, also known as tasers or “stun guns,” deliver “up to 50,000 volts of electricity intended to incapacitate their victims.”⁷³ In 2000, about 500 law enforcement agencies had purchased tasers; but by 2011, about 16,000 law

⁷² Hambling, *supra* note 56.

⁷³ COREY STOUGHTON ET AL., TAKING TASERS SERIOUSLY: THE NEED FOR BETTER REGULATION OF STUN GUNS IN NEW YORK 1 (2011), available at http://www.nyclu.org/files/publications/nyclu_TaserFinal.pdf.

enforcement agencies in the United States had them in use.⁷⁴ Recent evaluations of CED safety report that they reduce the odds of medical injury for both suspects and officers.⁷⁵ A study entitled *The Impact of Conducted Energy Devices and Other Types of Force and Resistance on Officer and Suspect Injuries* found that “whereas CEDs and OC spray [oleoresin capsicum or pepper spray], which typically are deployed some distance from resistive or combative suspects, were associated with injury reduction, the use of hands on tactics that require officers to be in close physical proximity to suspects to effect arrests was associated with an increased risk of injury to both officers and suspects.”⁷⁶

Nonetheless, one of the biggest risks to suspects targeted with CEDs is that exposure could be a contributing factor to the suspect’s increased heart rhythm.⁷⁷ Studies with healthy male subjects usually find that CEDs are painful but have no long-term impact on the health of the subject. In one study conducted in 2007, 105 police trainees were exposed to short Taser bursts, and the study found that none of the police trainees experienced cardiac dysrhythmias or morphologic changes.⁷⁸ However, Americans are

⁷⁴ *Id.* Also note that Taser is a specific commercial brand but the term “tasers” connotes CEDs broadly.

⁷⁵ BRUCE TAYLOR ET AL., COMPARING SAFETY OUTCOMES IN POLICE USE-OF-FORCE CASES FOR LAW ENFORCEMENT AGENCIES THAT HAVE DEPLOYED CONDUCTED ENERGY DEVICES AND A MATCHED COMPARISON GROUP THAT HAVE NOT: A QUASI-EXPERIMENTAL EVALUATION I (2009), available at http://www.policeforum.org/assets/docs/Free_Online_Documents/Use_of_Force/conducted%20energy%20devices%20matched%20agency%20study%202009.pdf.

⁷⁶ Michael R. Smith et al., *The Impact of Conducted Energy Devices and Other Types of Force and Resistance on Officer and Suspect Injuries*, 30 POLICING: AN INT’L J. OF POLICE STRATEGIES & MGMT. 423, 439 (2007).

⁷⁷ Douglas Zipes, *TASER Electronic Control Devices Can Cause Cardiac Arrest in Humans*, 129 CIRCULATION 101, 119 (2014); Erica Goode, *Tasers Pose Risks to Heart, a Study Warns*, N.Y. TIMES (Apr. 30, 2012), http://www.nytimes.com/2012/05/01/health/research/taser-shot-to-the-chest-can-kill-a-study-warns.html?_r=0/.

⁷⁸ Saul D. Levine et al., *Cardiac Monitoring of Human Subjects Exposed to the Taser*, 33 J. EMERGENCY MED. 113, 113–117 (2007).

faced with a number of prevalent health conditions that pose extra risks for large segments of the population. For example, obesity is a national epidemic.⁷⁹ Thus, police officer trainee test subjects at the height of the physical fitness pyramid are clearly not representative of the population. If preexisting conditions such as intoxication are present, heart stimulation could induce ventricular fibrillation.⁸⁰ Additionally, exposure could be harmful or even life-threatening for other at-risk populations.⁸¹ Suspects are also at risk of falling after being tased. One study indicated that six individuals died after CED exposure caused them to fall and strike their heads.⁸²

Equally important in the area of risk is overuse in initially low-level incidences. Best practices means that, “officials should be trained to recognize mere non-compliance stemming from a communication breakdown does not warrant CED use absent an imminent threat of significant physical harm”;⁸³ however, as we will see, CEDs have not infrequently been used against subjects who pose no physical danger to themselves, to officers, or to any other members of the public.

⁷⁹ Karen Kaplan, *Obese Americans Now Outnumber Those Who Are Merely Overweight, Study Says*, L.A. TIMES (June 22, 2015, 2:53 AM), <http://www.latimes.com/science/la-sci-sn-more-americans-obese-than-overweight-20150620-story.html>.

⁸⁰ Kumaraswamy Nanthakumar et al., *Cardiac Stimulation with High Voltage Discharge from Stun Guns*, 178 CAN. MED. ASS’N J. 1451, 1456 (2008).

⁸¹ Jared Strote & H. Range Hutson, *Taser Safety Remains Unclear*, 52 ANNALS OF EMERGENCY MED. 84, 84 (2008).

⁸² Mark W. Kroll et al., *Sensitive Swine and TASER Electronic Control Devices*, 15 ACAD. EMERGENCY MED. 695, 695–96 (2008); *Electronic Control Devices*, 179 CANADIAN MED. ASS’N J. 342, 343 (2008). “There are at least 6 cases of deaths from head injuries resulting from falls in which an electronic control device may have contributed to the fall, International warns of this risk in its training materials.” *Id.*

⁸³ AM. CIVIL LIBERTIES UNION OF MARYLAND, POLICY ON CONDUCTED ENERGY DEVICES AND BEST PRACTICES GUIDELINES 1 (2009), http://www.aclu-md.org/uploaded_files/0000/0045/aclumd_taser_policy_7-2009.pdf.

Courts are likely to find CED use appropriate only if this use of force is objectively reasonable under the Fourth Amendment.⁸⁴ *Graham v. Connor* sets out the test to determine if a use of force is objectively reasonable.⁸⁵ Factors that courts have considered in determining whether a force was appropriate include: degree or severity of the crime, whether the suspect posed an immediate threat to the safety of the officers or others, and whether the suspect was actively resisting arrest or attempting to evade arrest by flight.⁸⁶ These factors must be considered based on the totality of the circumstances.⁸⁷

Courts have agreed that use of force is least justified against nonviolent misdemeanants who do not flee or actively resist arrest and pose little to no threat to the security of the officers or the public.⁸⁸ In such situations, the use of a Taser is unconstitutional and is considered excessive force.⁸⁹

When subjects show slightly more resistance (e.g., questioning the police officer as to the reason for arrest), this was still not enough to constitute aggression or physical resistance. While courts are unclear as to whether the questioning of one's arrest would constitute verbal resistance, courts have nevertheless found that an arrestee's inquiry was insufficient to establish probable cause to justify the use of a CED.⁹⁰

⁸⁴ See *Graham v. Connor*, 490 U.S. 386, 388 (1989).

⁸⁵ *Id.* at 397.

⁸⁶ *Id.* at 396.

⁸⁷ *Id.*

⁸⁸ *Brown v. City of Golden Valley*, 574 F.3d 491, 497 (8th Cir. 2009). A Ninth Circuit Court of Appeals references national studies and police research organizations, which "agree that tasers are at least an intermediate level of force." *Bryan v. MacPherson*, 630 F.3d 805, 811 (9th Cir. 2010). This court held that Tasers and similar devices constitute an "intermediate, significant level of force that must be justified by [a strong] governmental interest involved." *Id.* at 810.

⁸⁹ *Casey v. City of Federal Heights*, 509 F.3d 1278 (10th Cir. 2007).

⁹⁰ *DeSalvo v. City of Collinsville, Ill.*, No. 04-CV-0718-MJR, 2005 WL 2487829, at *3 (S.D. Ill. Oct. 7, 2005).

If an officer tases a subject who is fleeing for fear of his or her physical safety, this use of force is considered excessive and in clear violation of the subject's Fourth Amendment right.⁹¹ Further, even when a subject is not necessarily fleeing for fear of his physical safety, one court has still found that the use of a Taser could be unconstitutional in light of the circumstances.⁹² The court reasoned that the level of force used must take into account the circumstances, not simply the type of force usually associated with a particular weapon.⁹³ The court used the force of a shove to demonstrate this concept. In a normal situation, a shove is an insignificant amount of force. However, when a subject is perched on a ledge of a building, a shove can be a deadly force.⁹⁴

In cases where subjects exhibited minor and/or severe aggression, courts have found that the use of a CED is unconstitutional unless the jury could find that the officer had probable cause to believe that the subject was dangerous to the police or to the public.⁹⁵

Hence, as our discussion of the case law has shown, suspects who are not an imminent danger to public safety may be subject to unnecessary and excessive force from CED deployment. Tasers may decrease the risk of medical injury to officers and suspects in police-civilian encounters, but they increase other risks, such as more use of force in situations not warranting force. Some officials have expressed concerns about their role in policing, such that officers may resort to CEDs to gain compliance over a suspect from a distance and bypass traditional methods of de-escalation

⁹¹ *C.f.*, *Roberts v. Manigold*, 240 F. App'x 675, 678 (6th Cir. 2007).

⁹² *C.f.*, *See Snauer v. City of Springfield*, No. 09-CV-6277-TC, 2010 WL 4875784, at *5 (D. Or. Oct. 1, 2010).

⁹³ *Id.* at 4.

⁹⁴ *Id.*

⁹⁵ *Tenn. v. Garner*, 471 U.S. 1, 11 (1985); *Ryder v. Topeka*, 814 F.2d 1412, 1418 (10th Cir. 1987).

such as talking a suspect down.⁹⁶ In 2013, the ACLU found that some Michigan law enforcement agencies were at risk of not complying with federal court rulings, manufacturer safety standards, and departmental policies.⁹⁷ Others remark that, “[because] the distinguishing feature of the Taser, compared with other forms of enforcing compliance, is that it can be used with one finger . . . perhaps this makes it more prone to abuse.”⁹⁸

V. QUESTIONS, EXPECTATIONS & HYPOTHESES

What should we expect with regard to CED utilization? This discussion gives rise to two sets of expectations regarding the deployment of CEDs across a range of suspect behaviors. We hypothesize that a suspect’s (perceived violent) behavior will predict greater CED deployment; however, we also expect that trends will reflect substantial patterns of overuse as well.

First, on one side of the suspect violence continuum (where the suspect displays no physical aggression), we expect steady over-deployment of CEDs across all category subtypes. That is, although no force is warranted in cases where the suspect poses no imminent risk to public safety, various factors make CEDs susceptible to abuse and will lead to unnecessary usage even in cases where a suspect is either passive or not resistant. Tasers will also be used in a substantial portion of cases where the suspect

⁹⁶ TAYLOR ET AL., *supra* note 75, at 70. “Another training issue is the inappropriate use of the CED. As with any service weapon, officers can misuse CEDs. Misuse can range from outright abusive or illegal use of the weapon to less obvious cases of officers turning to a CED too early in a force incident (e.g., bypassing verbal de-escalation skills and going right to the use of the CED).” *Id.*

⁹⁷ *Law Enforcement Agencies Urged to Adopt Uniform Policies that Adhere to Federal Law and Safety Standards*, AM. C.L. UNION (Feb. 21, 2013), <https://www.aclu.org/news/aclu-documents-troubling-use-tasers-michigan>.

⁹⁸ David Hambling, *Courts to Cops: Stop Tasing People into Compliance*, WIRED (Jan. 4, 2010, 9:33 AM), <http://www.wired.com/2010/01/court-dials-back-taser-use-cops-cant-zap-to-force-behavior/>.

demonstrates no physical aggression but provides verbal resistance or attempts to flee. News reports and court cases regarding CED misuse, then, will reflect broader trends in data on police use of force rather than a small set of outliers.

Second, on the other side of the continuum (where the suspect displays physical aggression), we expect a positive association between CED utilization and perceived suspect violence. That is, those suspects who are perceived as having demonstrated minor aggression, severe aggression or an intent to act with deadly force are more likely to be tased than suspects who do not display any aggressive physical action. In other words, this hypothesis poses that CEDs will on average be deployed against more violent suspects.

Together, these expectations underscore that advances in nonlethal weapons as alternatives to deadly force are not unwelcome, but we must vigorously and proactively guard against potential abuses of power.

VI. METHODOLOGY

The dataset we use for this analysis is the *2011 Evaluation of Less-Lethal Technologies on Police Use-of-Force Outcomes in 13 Sites in the United States, 1992-2007*, which included use of force reports from both CED-yes and CED-no agencies.⁹⁹ According to Taylor et al. (2009),¹⁰⁰ the data were collected from seven agencies with CED deployment and six agencies that did not deploy CEDs but were matched on other characteristics. For CED agencies, investigators collected at least two years of data before and after CED deployment. For CED-no agencies, investigators obtained data over a similar four-year period. Agencies were invited to participate based on whether they would be able to provide data for all incidences of use of force, had a written policy in place that identified where CED weapons

⁹⁹ TAYLOR & KOPER, *supra* note 11, at ii.

¹⁰⁰ TAYLOR ET AL., *supra* note 75.

were placed on a use of force continuum, were willing to share their data, and had at least 100 sworn officers.

Criteria used to produce a comparable sample of CED-yes and CED-no agencies include violent crime levels (4,374 violent crimes in CED-no sites and 5,771 violent crimes in CED-yes sites) and police activity (1,973 arrests for violent crimes in CED-no sites and 1,638 arrests in CED-yes sites). The population per square mile for the CED-no sites was on average 3,782 people per square mile compared to 3,466 people for the CED-yes sites. The CED-no sites averaged a household income of \$50,386 and 8.5 percent of the population below poverty level, compared to \$48,190 for the CED-yes sites and 10.1 percent below the poverty level.

Most of the data analysis consists of evaluating bivariate relationships, but we shift to multinomial logistic regression to confirm and expand upon our bivariate findings. We conducted separate analyses for CED-yes and CED-no agencies, since the outcome variable—type of weapon an officer deploys—diverges between the two, with no CED option available for officers in the latter type of agency. All missing data were excluded from the analysis. Although use of force reports are nested within agencies, there are too few clusters for each agency type (seven CED-yes and six CED-no agencies) in order to employ standard multi-level modeling or standard cluster adjustment procedures.¹⁰¹ We do not expect the size and direction of

¹⁰¹ JOSHUA ANGRIST & JORN-STEFFEN PISCHKE, *MOSTLY HARMLESS ECONOMETRICS: AN EMPIRICIST'S COMPANION* 319–321 (2009). There is some debate on how analyses should proceed with too few clusters, but no recommended procedure is ideal for this investigation. On fewer than 42 clusters, Angrist et al. write, “42 is enough for standard cluster adjustment to be reliable, and if less is too few, then what should you do when the cluster count is low? First-best is to get more clusters by collecting more data . . . [or] inflate the residuals in the hopes of reducing bias . . . [or recognize] that the fundamental unit of observation is a cluster and not an individual within clusters.” *Id.* The readers should also note that the current investigation is based on a publicly available dataset where site information is masked.

relationships between variables in our analysis to change, but we urge caution with interpretation where the statistical significance of a coefficient is marginal. Nevertheless, our multivariate findings buttress our descriptive findings for use of force reports among reporting agencies. Future investigations with a larger number of agencies ($n=42$ or more) would be ideal.

We produce multinomial logistic regression models separately for law enforcement agencies that adopted CEDs and those that did not in order to model the type of force that officers deploy given suspect behavior while controlling for individual-level social and demographic characteristics. We adopted our dependent variable from one utilized by Taylor et al. (2009) in their study of whether CEDs improved risks of medical injury to officers and suspects. They coded their use-of-force data into five categories: CED use only, baton use only, OC spray use only, other weapon use or multiple weapon use, and non-weapon force by officers (hands-on tactics and other non-weapon approaches).¹⁰² Since we are interested in new advances in policing technology, our primary outcome of interest is CED deployment.

Among CED-yes agencies, our dependent variable has five possible outcomes for the type of officer weapon deployed (CED only or $y=1$, baton only or $y=2$, OC spray only or $y=3$, other/multiple weapons or $y=4$ and no weapons or $y=5$). For CED-no agencies, the outcomes are reduced to four types (baton only, OC spray only, other/multiple weapons, and no weapons). We estimate a set of coefficients corresponding to each outcome with the no weapons category as our comparison group.¹⁰³ Reported

¹⁰² TAYLOR ET AL., *supra* note 75, at 42.

¹⁰³ Due to variation in the hands-on tactic category, we cannot surmise that every incidence of force where no weapon is listed is a lesser use of force than that with a conducted energy device. However, “[m]ost applications of force are minimal, with officers using their hands, arms or bodies to push or pull against a suspect to gain control.” ERIC H. HOLDER, JR. ET AL., POLICE USE OF FORCE, TASERS AND OTHER LESS-LETHAL WEAPONS, NAT’L INST. OF JUST. RES. IN BRIEF ii (2011), *available at* <https://www.ncjrs.gov/pdffiles1/nij/232215.pdf>.

coefficients are relative risk ratios (RRR)—or the ratio of two risks, which denotes the relative probability of an outcome to the base outcome for a one-unit change in (X_i) our independent variable. In other words, coefficients reported are RRR that reflect the risk of choosing, for example, to deploy a CED over deploying no weapons.

To fit our models predicting the type of weapon an officer deployed, we include variables that account for perceptions of suspect violence and whether the suspect was reported as in possession of a weapon, in addition to controls such as gender, race, and age. These variables are included in our analysis as dummy variables indicating whether the suspect was perceived as violent (1=suspect displayed behavior reported as mild aggression, severe aggression or deadly force, 0=no perception of violence), whether the suspect was reported as in possession of a weapon (1=yes weapon, 0=no weapon), male (1=male, 0=female), white (1=white, 0=non-white), and age (1=under 25 years, 0=25 years and over).

VII. CED STUDY RESULTS

A. Descriptive Findings

We first examine the distribution of officer-deployed weapon types across suspect behaviors. Because we are especially interested in CEDs, we examine patterns in CED deployment in contrast to other weapons usage categories.¹⁰⁴ CEDs first came onto the market as an alternative to lethal force, but they have been utilized across a much broader range of less serious situations.¹⁰⁵ Use of this painful electromagnetic device on suspects

¹⁰⁴ Our tabulations showed that tasers are often used in combination with other weapons against a suspect. Since the experience of a suspect against whom multiple weapons (including CEDs) are deployed will be different from the experience of a suspect in a CED only incident, we focus our analysis on the CED alone group.

¹⁰⁵ Dara Lind, *Why Police Officers Often Resort to Lethal Force as Their First Response*, VOX IDENTITIES (Dec. 26, 2014, 10:10 AM), <http://www.vox.com/2014/12/26/7447891/police-shoot-taser>.

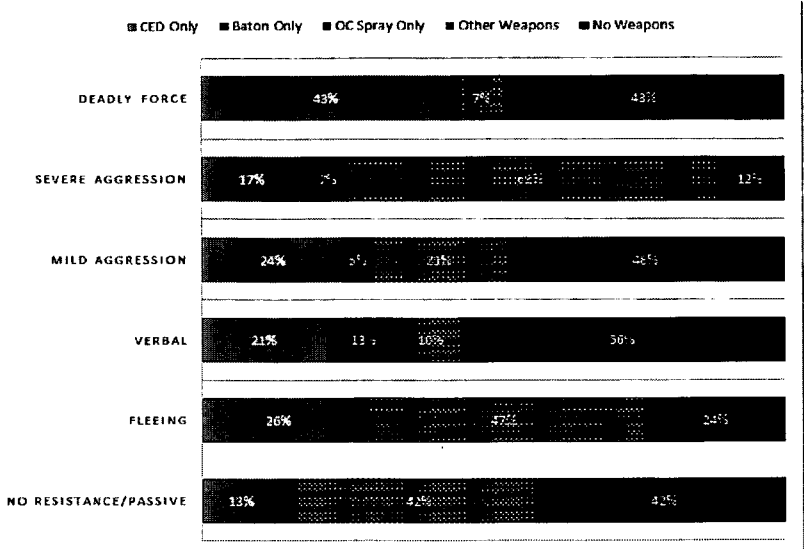
who are not exhibiting aggression or otherwise endangering public safety exposes them to potentially excessive uses of force and undue risks. Various court rulings, recommendations from mainstream law enforcement agencies,¹⁰⁶ and human rights organizations¹⁰⁷ present CED deployment against passive or physically non-aggressive suspects as inappropriate. Accordingly, understanding whether and why CEDs are used on this category of non-aggressive suspects merits attention from scholars, law enforcement officials, oversight professionals, policymakers, and members of the public.

The data underscore that indeed CEDs are regularly employed for low-level incidents. Figure 2 reports that even in cases with passive or no resistant suspect behavior, CEDs alone were deployed 159 times, which comprises 13 percent of these cases. Batons only or OC spray only were used a total of 36 times in this suspect category. Multiple weapons or other weapons (non-CED only, non-baton only, non-OC spray only) were deployed 499 times (or in 42% of incidences in this suspect category). Hence, for use of force incidents reported where the suspect demonstrated passive or no resistant behavior, over half included the deployment of a weapon against that suspect. The argument against using CEDs on suspects who only display passive (e.g., suspects who become “dead weights”) or no resistant behavior is strong, and one would expect officers to use a minimum, if any, force against these persons.

¹⁰⁶ Michael E. Miller, *Taser Use and the Use-of-Force Continuum: Examining the Effect of Policy Change*, THE POLICE CHIEF (Sept. 2010), http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display_arch&article_id=2204&issue_id=92010.

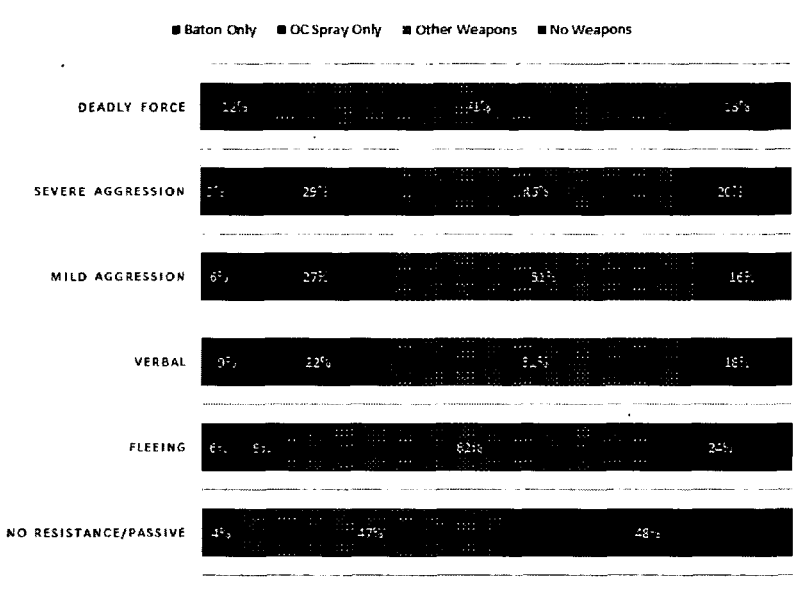
¹⁰⁷ *Law Enforcement Agencies Urged to Adopt Uniform Policies*, AM. C.L. UNION (Feb. 21, 2013), <https://www.aclu.org/news/aclu-documents-troubling-use-tasers-michigan>; Miller, *supra* note 106; AMNESTY INT’L, AMNESTY INTERNATIONAL’S CONCERNS ABOUT TASER® USE: STATEMENT TO THE U.S. JUSTICE DEPARTMENT INQUIRY INTO DEATHS IN CUSTODY (2007), available at <https://www.amnesty.org/download/Documents/60000/amr511512007en.pdf>.

Figure 2. Suspect Behavior by Officer Weapon Used, Among CED-Yes Agencies.¹⁰⁸



¹⁰⁸ Figures report percentages for the distribution of officer weapons within each suspect behavior category based on authors' calculations of Evaluation of Less-Lethal Technologies on Police Use-of-Force Outcomes in 13 Sites in the United States, 1992-2007 dataset. TAYLOR & KOPER, *supra* note 11 (ICPSR 27561-0003). Item Wording: (1) Suspect Behaviors: "For each suspect who was involved in the incident, what was the suspect's . . . BEHAVIORS DURING INCIDENT? Please mark all that apply—Passive/dead weight, Verbal resistance, Fleeing, Mild aggression (e.g., pushing, slapping), Severe aggression (e.g., punching, kicking), Deadly force, Other (please specify)." "Other" responses were masked in the public dataset and these are excluded from the analysis. (2) Officer Weapons Employed in Use of Force Incidents: "For each officer who was involved in the incident, what was the officer's . . . WEAPON(S) used? Please mark all that apply—Personal issue chemical agents, Conducted Energy Device, Straight or side-handle baton, Expandable baton, Firearms, Weapon-deployed chemical agents, Other impact munitions, Other (please specify)." Responses were coded into one of five categories for weapons deployment: CED only, Baton only, OC Spray Only, Other Weapons (including multiple weapons), and No Weapons Listed (physical or hands-on only). Special attention is given to CED utilization, since the article focuses on weighing risks with advances in less lethal technologies.

Figure 3. Suspect Behavior by Officer Weapon Used, Among CED-No Agencies.¹⁰⁹



¹⁰⁹ Figures report percentages for the distribution of officer weapons within each suspect behavior category based on authors' calculations from Evaluation of Less-Lethal Technologies on Police Use-of-Force Outcomes in 13 Sites in the United States, 1992-2007 dataset. TAYLOR & KOPER, *supra* note 11 (ICPSR 27561-0003). See n. 108 for item wording. Responses were coded into one of four categories for weapons deployment: Baton only, OC Spray Only, Other Weapons (including multiple weapons), and No Weapons Listed (physical or hands-on only).

Verbal resistance from suspects and fleeing suspects are two categories where the use of CEDs is controversial. The tension with verbal resistance is that suspects have fundamental rights to free speech but they may anger officers with their objections even though they pose no danger to public safety. Absent threats to harming anyone, firing a CED on a suspect who merely verbally resists is questionable. Other factors affect whether fleeing suspects justifiably can be fired upon with a CED, especially in those scenarios where the subject who might get away is suspected of only a minor crime and poses no imminent danger to public safety. Fleeing suspects, as well as suspects who are in an elevated position (well above ground), are in danger of falling with no ability to cushion the impact with their hands or legs because their bodies are immobilized subsequent to being hit with a CED. Our data show that, officers fire upon suspects who demonstrate verbal resistance, about one out of five (21 percent) with a CED. Officers used a CED to fire at fleeing suspects in 26 percent of incidents in this suspect behavior category. Again, these individuals were not categorized as manifesting physical aggression in the use of force reports.

Cases where suspects pose an imminent danger to public safety provide a test for CED implementation on the other side of the suspect behavior spectrum. Ideally, CEDs would not be fired at individuals who pose no resistance, passive resistance, verbal resistance, or are simply fleeing. CEDs are designed to replace lethal force in situations where the suspect displays aggression.¹¹⁰ Where the suspect displays physical aggression, we anticipated greater CED use—and this hypothesis is supported. Where the suspect attempts to act with deadly force, CEDs are deployed alone 43 percent of the time. Where the suspect category includes those who display severe aggression, CEDs only are deployed by officers 17 percent of the

¹¹⁰ Smith et al., *supra* note 76, at 439.

time. In cases where the suspects display mild aggression, CEDs only are used 24 percent of the time.

Therefore, both our expectations are supported. First, we predicted steady over-deployment of CEDs across low-level resistance categories and this is supported. We found that CEDs are deployed in a substantial number of cases of low-level resistance from suspects who do not comprise immediate dangers to public safety, including those who offer no resistance and those who are only passively resistant. Second, we hypothesized that CED usage would be more likely in cases with suspects who were perceived as violent. Although the data underscored that CEDs may be used in excess where the suspect poses no danger, they are indeed more likely to be used for cases with suspects perceived as dangerous. These data buttress the hypothesis that the use of CEDs is nonlinear across the continuum of suspect behaviors.

A comparison of CED-yes agencies and CED-no agencies paints a mixed picture for use of force. According to our tabulations (table not shown), this contrast highlights that CEDs are preferred to batons only and OC spray only across the range of suspect behaviors in CED agencies. Conversely, officers in CED-no agencies seem to employ a range of tactics across suspect behaviors, rather than favoring available less lethal weapons such as the baton only or OC spray only. That is, in CED-no agencies, across all categories, deploying other/multiple weapons is more popular than for CED agencies, ranging in utilization from almost half at 47 percent of the time in use of force reports for severe aggression to 71 percent of the time for suspects who demonstrate deadly force.

For CED deploying agencies in the study, the report on CED use is mixed. CEDs may substitute for lethal force in situations with suspects who may pose an imminent danger to public safety; however, they are also employed excessively at the other end of the spectrum including against those with only passive resistance and those who display no resistant behavior. For CED-no agencies, the proportion of cases in which officers

deploy no weapons is approximately equal across most suspect behavior categories, including verbal resistance (18 percent), mild aggression (16 percent), severe aggression (20 percent), and deadly force (18 percent). No weapons were listed in higher proportions among CED-no agencies for incidences where the suspects showed either passive or no resistance (48%) or were fleeing (24%).

Although the agencies that deployed CEDs in the study were matched to agencies that did not across a range of variables, the former have many higher reported uses of force (2527 incidences where a weapon was used in CED-yes agencies versus 964 incidences for CED-no agencies, with an average of 361 incidences per CED-yes site and 161 per CED-no site). One explanation for this could be that there are one or more unobserved factors that are driving the use of force reports at the CED deploying agencies. For example, perhaps there is a different culture of reporting between CED-yes and CED-no agencies, such that agencies with CEDs are predisposed to documenting a wider range of uses of force.

B. Multivariate Findings

Having determined bivariate patterns in use of force across categories of suspect behavior, we now shift to an evaluation of the predictors of officer use of force in a multivariate analysis. For example, we assess whether perceived suspect violence is the major predictor of the deployment of CEDs (and other weapons) over no weapons. We test whether suspects who are perceived as violent will be subject to more weapons deployment in comparison to the no weapons base outcome. We include gender, race, and age measures as controls in our analysis. We also include a measure of whether the suspect had a gun, which is entered into the model equation independent of the suspect's perceived violent or non-violent behavior. We conducted separate analyses for CED-yes and CED-no agencies, since the outcome variable—the type of weapon an officer deploys—diverges

between the two, with no full CED option available for officers in the latter type of agency.

Consistent with our hypothesis, officers are more likely to deploy a weapon when the suspect is perceived as violent in CED agencies. Specifically, the RRR of an officer choosing to deploy a CED over no weapon for a suspect who is perceived as violent (versus non-violent) is 2.64 ($p < .001$). Similarly, the RRR for an officer choosing to deploy a baton only or OC spray only over no weapon given a suspect's perceived violence is 11.63 ($p < .001$) and 3.94 ($p < .001$), respectively. The relative risk ratio for an officer choosing to deploy other/multiple weapons with the same criteria is 2.65 ($p < .001$).

Table 1. Predictors of Weapons Deployed by Suspect Behavior and Agency Type.¹¹¹

OFFICER WEAPON DEPLOYED	CED AGENCY		NON-CED AGENCY	
CED Only				
Suspect Reported as Violent	2.64	**	–	
Suspect Has Weapon	3.13	**	–	
Constant	0.10	**	–	
Baton Only				
Suspect Reported as Violent	11.63	**	1.49	
Suspect Has Weapon	0.00		1.64	
Constant	0.00		0.06	**
OC Spray Only				
Suspect Reported as Violent	3.94	**	2.59	**
Suspect Has Weapon	0.99		0.70	*
Constant	0.05	**	0.43	**
Other (Not CED/Baton/OC Spray Only) OR Multiple Weapons				
Suspect Reported as Violent	2.65	**	1.82	**
Suspect Has Weapon	0.90		1.03	
Constant	0.35	**	0.74	
No Weapons (Base Outcome)				
	# of obs	1947.00	# of obs	1189.00
	LR Chi ² (20)	238.49	LR Chi ² (15)	56.04
	Log Likelihood	2218.78	Log Likelihood	1387.21

¹¹¹ TAYLOR & KOPER, *supra* note 11 (ICPSR 27561-0003). Notes: (1) Models are specified as multinomial logistic regressions with “No Weapons” as base outcome and with all variables coded 0 to 1. Missing data are excluded; (2) Coefficients reported are relative risk ratios that reflect the risk of an officer choosing, for example, to deploy a conducted energy device over no weapon; and (3) Coefficients are shown for “Suspect Reported as Violent” (1=yes 0=no) and “Suspect Has Weapon” (1=yes 0=no). Model specification also includes controls for male (1=yes 0=no), White (1=yes 0=no), and under 25 years of age (1=yes, 0=no). Coefficients for these variables are not shown here but full tables can be obtained from the corresponding authors.

As with CED-yes agencies, controlling for other factors, our findings for CED-no agencies underscore that perceptions of suspect violence are also the strongest predictors of whether an officer chooses to deploy a type of weapon over non-weapons. For suspects who are reported as violent (versus those who are not), the RRR of an officer choosing to deploy OC spray only is 2.59 ($p < .001$), and the RRR for other/multiple weapons deployment is 1.82 ($p < .001$). Hence, perceived suspect violence is the dominant predictor of whether a weapon is deployed against the suspect, a finding that holds across both CED-yes and CED-no agencies.

The association between reports of suspects with weapons and officer weapons deployment varies across agency types. For CED-yes agencies, the RRR for an officer to deploy a CED against suspects who are reported as in possession of a weapon (versus those who are not) is 3.13 ($p < .001$). For baton only, OC spray only and other/multiple weapons deployment (versus no weapons used) in CED-yes agencies, whether a suspect is reported for having a weapon does not appear to predict officer weapons utilization, holding other factors constant. For CED-no agencies, all else equal, whether a suspect is reported for having a weapon does not increase his or her likelihood of being exposed to baton only deployment or for other/multiple weapons deployment. For a suspect who is perceived as having a weapon, the RRR of OC spray only deployment (versus no weapon) is 0.7.

The dominant finding is that perceived suspect violence is positively associated with officer weapons deployment for almost all weapons categories across both CED-yes and CED-no agencies. When tasers are available to officers in CED-yes agencies, they are more likely to use them with aggressive suspects. This is consistent with their intended use.

VIII. CONCLUSION

Contrary to guidelines for their utilization in the field, we found that officers deploy CEDs in a substantial number of cases involving suspects who do not comprise immediate dangers to public safety, including those

who offer no resistance and those who are only passively resistant. Overuse of CEDs as found in this study is consistent with other work. For example, “when looking into whether Tasers are really used against dangerous suspects, [Davison] notes that a review of over 112 Taser uses in one county in Colorado found that a third of the victims were handcuffed at the time.”¹¹² Consistent with their intended use, however, we also observed that CED deployment is positively associated with perceived suspect violence. Both of these findings are consistent with our hypotheses.

CEDs may comprise a viable alternative to lethal force where the suspect poses an imminent danger to public safety, but we must assess and monitor their use carefully so that no overuse occurs in instances where the suspects do not pose an immediate threat to public safety. As Americans, we have rights accorded to us that citizens of other countries do not. However, being a member of this privileged democracy means that we have responsibilities for the development and protection of its good government principles—transparency in government, the rule of law, respect for persons, and democratic inclusion.

As we move forward, CEDs will number one among a class of energy weapons that are able to be administered from a distance without wires that need to attach to the target’s skin. These weapons, because they are invisible to the naked eye, are rife for abuse of power without detection. Energy weapons might be used once inappropriately against a target, but in a worst-case scenario with a vindictive and retaliatory police officer or group of police officers¹¹³ who wanted to do more damage to a target, little

¹¹² David Hambling, *DR Book Club: Taking Aim at ‘Non-Lethal’ Weapons*, WIRED (July 23, 2009, 5:13 PM), <http://www.wired.com/2009/07/dr-book-club-prof-takes-aim-at-non-lethal-weapons/>.

¹¹³ For example, Frank Serpico is a “man whose long and loud complaining about widespread corruption in the New York Police Department made him a pariah on the force.” Corey Kilgannon, *Serpico on Serpico*, N.Y. TIMES (Jan. 22, 2010), http://www.nytimes.com/2010/01/24/nyregion/24serpico.html?pagewanted=all&_r=0. One incident underscores his treatment most clearly, as a “patrolman [he was] shot in the

hindrance exists to the undetected harassment or torture of that target with these kinds of weapons. Adding difficult to detect (by design), easy to deploy weapons to the arsenal of this type of officer is foolhardy without a rigorous, well-trained, proactive oversight structure in place.

Next, we consider the type of contribution that civilian oversight can offer to these technological advancements. The Innocence Project recommends electronically recording interrogations for later review.¹¹⁴ However, torture with directed energy weapons is invisible.

IX. RECOMMENDATIONS

We list five categories of recommendations germane to oversight and the ongoing development of less lethal technologies. First, civilians should gain experience in exercising their rights to government records through public records requests and use the records obtained to better understand and oversee agency processes. Second, civilian practitioners of oversight should gain access to training in methods of detection and forensics, keeping pace with new technologies as they develop. Third, less lethal equipment should be designed and implemented such that the data for each discharge are automatically recorded and retained for statistical analysis. Fourth, civilian oversight practitioners should seek additional auditing powers through lie

face during a 1971 drug bust while screaming for backup from his fellow officers, who then failed to immediately call for an ambulance.” *Id.* But other officers report harassment and retaliation from colleagues as well. See e.g., Allison Bourg & Sara Blumberg, *Law Enforcement Agencies Working to Find Balance in ‘Thin Blue Line’*: *Honor vs. Loyalty*, ABC NEWS ONLINE (Mar. 29, 2014), <http://www.abc2news.com/news/state/law-enforcement-agencies-working-to-find-balance-in-thin-blue-line>; Leslie Bridgers, *Westbrook Officer Claims Harassment, Retaliation for Ticketing Girlfriend of Police Colleague*, PORTLAND PRESS HERALD (Aug. 28, 2014), <http://www.pressherald.com/2014/08/28/westbrook-police-officer-claims-sexual-harassment/>.

¹¹⁴ *False Confessions & Recording of Custodial Interrogations*, INNOCENCE PROJECT, <http://www.innocenceproject.org/free-innocent/improve-the-law/fact-sheets/false-confessions-recording-of-custodial-interrogations> (last visited Aug. 9, 2015).

detector tests for stakeholders (including informants and officers) at the start of investigations or an initial nomination to a given watchlist, as well as during the course of long-running investigations. Fifth, agency officials should strengthen whistleblower protections.

Civilians should gain experience in exercising their rights to an expansive set of government records that fall within the domain of “the people’s business.”¹¹⁵ Through public records laws, including the Freedom of Information Act applicable to federal agencies and parallel state records laws, civilians can request records from law enforcement agencies on new weapons developments, information on how these weapons have been deployed in the field, and official policies about how weapons are regulated by police agencies. Civilians can hold parties accountable by being attentive to this aspect (in addition to others) during the ongoing militarization of our law enforcement agencies.

The development of new, less lethal weapons technologies that employ directed energy will complicate civilian oversight and we should make substantial investments in training for our civilian oversight bodies. Civilian oversight professionals already review complaints that come to their attention, but the rapid developments of energy weapons may pose new challenges due to an absence of traditional ballistics. We need to quickly move to provide formal training for civilians, oversight professionals, and first responders in the methods of detection and forensics for new technologies with an eye toward potential abuses.

More generally, civilians in oversight, as well as first responders investigating potential abuses, will face almost impossible hurdles with the need for constant new training if they are to rely on their knowledge alone

¹¹⁵ Bradley Zint, *What is the Public Records Act?*, L.A. TIMES (Mar. 28, 2015), <http://www.latimes.com/tn-dpt-me-0329-costa-mesa-public-records-sider-20150328-story.html>.

in identifying abuses with new energy weapons. Civilian oversight practitioners can seek additional auditing powers. A better approach is to automatically record each time an energy weapon is discharged and to proactively and systematically audit all investigations across law enforcement agencies. This allows oversight practitioners to identify potential victims of police abuse of power (e.g., using less lethal technologies to harm an individual targeted for retaliation, with little risk of detection where rigorous oversight is lacking). We need qualified and ethical statisticians whose only job is to analyze data to identify outliers that might reflect excesses in public resource investment relative to the danger that a person poses.

In order to maximize public interest and minimize abuses of power, we also need methods to audit, monitor, and assess truthfulness of public officials and public employees whom we trust with power and taxpayer resources, as well as the confidential informants upon which they rely. Randomized lie detector tests for the auditing of investigations and watchlisting is integral, both at the start of the investigation or initial nomination to the watchlist as well as during the course of long-running investigations. Rapid advances in technology involving brain scans may lead to promising tools for the detection of deception in abuses of power; however, these techniques have yet to be proven as reliable.¹¹⁶ Traditional polygraph tests (recognizing that they do not prove guilt but rather highlight subjects that may merit further investigation) can substitute during the auditing process until other perfected technologies arrive.

Finally, we must strengthen protections for whistleblowers. When a whistleblower's protected disclosures are vindicated, we should underscore

¹¹⁶ Emily Saarman, *New Lie Detection Technology Too Much Like Scientific Mind Reading, Ethicist Says*, STAN. NEWS (May 3, 2006), <http://news.stanford.edu/news/2006/may3/lies-050306.html>.

their leadership, courage, and integrity as ideal-type behavioral models within our respective agencies. Potential targets of retaliatory law enforcement investigations, watchlisting, and/or abuses with new weapons technology may want to report violations, but they may be unable to identify the potential agency involved if they lack information. We must take proactive action in order to enhance public safety and prevent abuses of power that detract from the work of good officers who are on the job every day.