

RICK SMITH

**THE**  
**END OF**  
**KILLING**

● ●  
PAGE TWO  
BOOKS

*“If we can put a man on the moon and return him safely to Earth,  
why can’t we put a man on the ground and take him safely to jail?”*

CAPTAIN GREG MEYER, LAPD (RET.)

*“Don’t find fault, find a remedy.”*

HENRY FORD

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## AUTHOR'S NOTE

**T**WENTY-FIVE YEARS AGO, I launched a business in a garage that would grow to become an international firm called Axon Enterprise. You may know that company better by its previous name: TASER International.

Today, over one million TASER weapons have been deployed, saving hundreds of thousands of people from potential death or serious injury. Alongside TASER weapon technology, we led the movement to have police wear body cameras, which have shown great promise to both improve transparency and reduce violent police encounters. We've proven, I believe, that it's possible to address important social problems through a combination of technology and entrepreneurship.

I remain the CEO of Axon, but I am not writing this book in my capacity as a corporate leader. Rather, I am writing it in my personal capacity. My purpose in this book is to challenge conventional thinking about a problem that has plagued human civilization since the beginning: the practice of killing.

I believe we can reduce violence in our world, but we are not doing everything we can to achieve that goal. That's partly because the discussions about public safety, violent crime, and gun ownership are stuck in place. We retreat into online echo chambers where we interact with people who think just like we do, and the battles around pressing challenges become the intellectual equivalent of trench warfare: we dig in, we don't move, we fight for our side, and we yell ever more angrily at those on the other side.

I do not believe that we will solve today's challenges by yelling more emphatically about approaches that have been around for decades or by denigrating people with opposing views. We need new thinking and fresh ideas. We need to explore outside of the echo chambers and interact with people who think differently than we do.

I imagine that many people see me as a pure law-and-order kind of guy. I'm not, and if that's what you're expecting, then I hope this book will disappoint you. On the one hand, I will argue that police need more advanced tools and technology to keep a modern society safe. On the other, each of those technologies carries significant risks of abuse and oppression that must be addressed to realize their promise. We must find the right balance of privacy and security, which is the proper path to both fair and effective law enforcement.

Some of the ideas in this book will seem radical and controversial. I propose, for example, that we must modernize the laws we empower police to enforce, starting with ending the failed war on drugs, which has done little to reduce drug use and has created one of the primary drivers of killing in the modern world. I see opportunities to use artificial intelligence and robotics to change the nature of warfare—not to industrialize killing, but to industrialize *not* killing—enabling military operations without loss of life. I invite activists and academics to engage in helping us envision the problems these new technologies will create, and to design oversight mechanisms to prevent and deter misuse.

My goal in suggesting what sound like far-out ideas is to reach across the intellectual divides to find common ground and provide novel approaches to age-old problems. To accomplish this goal, I have done something that most CEOs of public companies are told never to do: speak my mind freely. This book is a private brainstorm made public. And the last thing you want to do in a good brainstorming session is kill ideas—even crazy-sounding ones—too early. Many times, I've witnessed the ideas we were tempted to write off become the breakthrough solutions we need.

This book includes the thoughts of many people I've interviewed about these subjects, including people who often disagree with me. For you, the reader, I hope this is an opportunity to think critically and creatively. I invite you to imagine how the future might be different. Feel

free to challenge me. If you prove that some of my ideas are completely wrong, and do so logically, you will earn my respect and help advance our shared goal of a less violent world.

Suggesting a risky new idea and then having it modified or corrected is an essential part of the creative process. The original idea may not be the precise answer, but it can provide an important stepping stone along the path of innovation. The challenges that are the subject of this book need more free-ranging thinking and rigorous back-and-forth, and a lot less anger and divisiveness. To that end, I invite you to join the conversation on Twitter, posting your ideas, opinions, and refutations with the hashtag #EndOfKilling. Let's all challenge ourselves to keep the conversation civil in an age where that has become ever more difficult, especially on sensitive topics like those covered in this book.

This book includes stories from the development of my company, creating weapons that are designed to incapacitate someone while avoiding death or serious injury. I want to share these stories—some of which I've never shared before—because I think it's important for people to understand what work in this field actually looks and feels like.

Typically, you'll only read about TASER weapons in the press when things go awry. These are incredibly complex and difficult issues, dealing in life and death. I've been through countless lawsuits. I've survived numerous campaigns to discredit me and attempts to end my work. I am pushing hard to change the world, and I have learned through that process that the world pushes back pretty hard. I've been in the "end of killing" business for over two decades. It is my personal mission, and I believe in it, but I've also faced my fair share of critics and naysayers. This book doesn't run away from any of those criticisms.

But this isn't primarily a story about my company or what we've built. Changes to public safety and military technology are happening all around us. How we police our neighborhoods, how we fight our wars, how we pursue justice, how we protect ourselves—each of these is going through a monumental shift. In the same way that the smartphone has reconfigured our relationship with our friends, our music, and our reading, the technologies that are possible today should force us to rethink everything we thought we knew about surveillance, privacy, violence, and killing.

Many of the things I discuss in this book are neither the views of nor the programs of the company of which I am CEO. In that role, I have a talented team of people who challenge my ideas and put them through a rigorous risk assessment before they ever get approved or implemented. But this book needed to be more than just the safe ideas that a public company can entertain in a press release. If I only shared the safe ideas, the book would lose some of its power to drive a change in our thinking. And the opportunity for some crazy idea that ultimately changes the world for the better might have been lost.

Every technology discussed in this book carries a risk of abuse. It also brings a promise of improving safety and enhancing quality of life. I'll touch on the risks, but I will focus more attention on the benefits of these new technologies, largely because I believe the risks receive ample media attention already. We need a more robust discussion of how new technologies can benefit us.

There is a temptation to look at every issue in the world of military and policing only through the lens of George Orwell. In that view, any and all public safety technology—any progress in the tools given to police and soldiers—inevitably becomes a tool of totalitarian regimes. I believe we should also consider the future envisioned by Gene Roddenberry, creator of *Star Trek*. We should consider a vision of a future in which technology elevates humanity and ask how we can guide ourselves toward these more optimistic possibilities.

Join me with an open mind in imagining a different future. These ideas might at first appear scary or bizarre, but beneath the surface we just might find a world with far less human tragedy and suffering, and far more peace and compassion. I am confident that some of these ideas are not yet fully formed—and I invite you to challenge me. You may convince me the risks outweigh the benefits, or you might have the critical idea that tilts the balance toward a better world. And together, we just might find a way to use new technologies to solve some of our oldest problems.

RICK SMITH

*Scottsdale, AZ · 2019*

## INTRODUCTION

**K**ILLING IS A technology problem. And we can use technology to end killing as we know it.

The Raqqa scene that opened the book is an exercise in science fiction, but it illustrates what future armed conflict may actually look like. As futuristic and far out as that Raqqa scene seems, many of the capabilities and technologies described in the story already exist today. It isn't too much of a stretch to imagine that we could fight current and future wars and keep the peace without a drop of spilled blood (or at least with a greatly reduced need for it).

The same goes for the police shooting that leaves a community traumatized and deeply divided: that's something we have the technology to prevent. Awful headlines about school shootings can become a thing of the past. All of that can happen through a thoughtful application of modern technology.

This idea, that new technology can help eliminate humanity's historic violent tendencies, forms the basis of this book. And I suspect I know what you're thinking: this is crazy. Radical. Controversial. Unthinkable. Yes. Yes. Yes—and yes. It is all of those things—but it is not impossible.

As with all truly radical ideas, I expect that this idea will be greeted with disbelief or even ridicule the first time it's heard. And probably the second and third times, too. But to me, this is more than a crazy idea. Building technologies to reduce violence and protect human life is my life's work. I've spent my career trying to create products that make



killing obsolete. And I believe that those technologies hold a remarkable, still untapped potential.

I've also come to understand, from experience, that killing is something other than a crime, a sin, or a social ill. It is a problem that can and must be solved. And with the right technology, we can solve it.

YOU HAVE probably heard of the TASER weapon, a stun gun device that uses electricity to incapacitate a human subject. If you're in law enforcement, you might know it because you carry one on your hip. If you're in the general public, you might know it because it has become part of popular culture. Maybe you've seen TASER weapons used in film, and I bet you still remember the "Don't TASE me, bro" meme (selected as the most famous phrase of 2007).

Though you probably know my company's product, you might not know its origin story. When I was in college, two of my friends were shot to death in a parking lot, after a minor traffic accident they were involved in led to a fatal confrontation. It was a senseless tragedy, and also the most pivotal event of my life. Once the problem of gun violence hit close to home, I began to think about it more seriously and creatively.

Gun violence—and violence more generally—has been conceived of as a legal problem, an economic problem, a cultural problem, a moral problem, and more. Through all of those conceptions, it has remained intractable. What if we framed the problem in an entirely new way: as a technology problem? As I asked that question after my friends were killed, inspiration came from a familiar place: science fiction.

I used to devour science fiction as a kid. In *Star Trek*, there's a weapon called the phaser. I'm sure you can picture Captain Kirk (or Captain Picard, if you're a bit younger than me) wielding one, issuing orders like, "Set phasers to stun." I wasn't the first person to look at utopian science fiction and think about how to make it a reality. Others have watched *Star Trek* or similar shows and asked, "Why can't we have warp travel? Or hover boards? Or a peaceful planetary government? Or a 'post-scarcity' economy?" I watched, and asked a different question: *Why can't we have phasers?* Meaning, what if weapons had a setting that would allow you to incapacitate someone rather than end their life?

Sometimes naiveté can be the soil of creativity. My second naive question—*Could we build a Star Trek phaser?*—led me to find a retired NASA scientist who'd had a similar thought thirty years earlier. He and I worked together to make the TASER product, which led to the company I have spent my life building.

The idea at the heart of this book has animated my career: we should not accept killing as an immutable part of human society. We can make the practice of killing obsolete in our lifetimes. Killing is, in fact, a technology problem.

That assertion merits some explanation. First, my primary work concentrates on sanctioned killing—self-defense, police shootings, warfare. In other words, instances in which it is legally permissible to take a life. As technology changes, our standards of what is acceptable and lawful must change as well. Killing that we today consider acceptable and lawful is precisely the kind of killing we can be rid of, and sooner than you might think, once we have the right technology to make it obsolete.

Second, I will explore strategies to reduce murder and violent crimes, the illegal killings and predation. Some of these approaches are policy oriented—such as modifying or eliminating laws that underpin efforts like the “war on drugs,” an effort that that, I believe, perpetuates violence. If the primary role of government is to ensure a safe and peaceful society, then when we identify laws that serve as engines driving violent behaviors, we should take swift action to address or eject them.

Simultaneously, there is an opportunity to leverage the growing network of cameras and sensors to ensure violent crimes are effectively prosecuted or even prevented. In every incident of violent crime, the perpetrator is effectively placing a bet that they will not get caught. Modern technology can decrease the probability of getting away with it, resulting in fewer criminals taking the bet and those who do being rapidly removed from society so that they cannot offend again.

More broadly, I believe modern weapons carried by soldiers and police are antiquated, just bad upgrades on the musket. If we invest our resources, scientific know-how, and political willpower in upgrading the technology we use, we can make killing every bit as outdated. We could build weapons that don't destroy human life, but rather incapacitate and subdue threats. In cases in which sanctioned violence needs

to occur—a police officer immobilizing a suspect or a soldier capturing an enemy—we can develop effective alternatives to killing.

THESE ARE ideas, but these ideas aren't abstract and they have life and death consequences. Almost 40,000 people a year are killed with firearms in the United States, and 250,000 are killed annually worldwide. A new era of weapons technology could bring that number down. In the process, it could change how we think, talk, and legislate the business of killing.

There will still, unfortunately and tragically, be gun deaths and gun crimes. The world is a violent place, and this book is not about the end of violence or the end of death, but the end of killing. I don't want to pretend that technology can fix all of what human beings do to one another. That kind of techno-utopianism has, at times, proven either misguided or dangerous. At the same time, I don't want to sell the thesis short. I think lives can be saved if we embrace the idea that a lot of modern killing happens because we haven't thought hard enough about the tools being used to police our streets, fight our wars, and protect our homes.

Killing is not some hard truth of human nature that we are powerless to stop. For thousands of years, killing was the primary means for determining the outcome of many interpersonal or intercommunity conflicts. Thankfully, the amount of killing in the world is dropping dramatically. Killing is no longer accepted, except in limited edge cases where we have no other suitable technological choice. This book is about creating those choices and enabling technologies and policies that further the historic decline in violence, until killing is just a bad memory we read about in history classes.

WE NEED robust public discussions about the effects of technology, about how we use new devices, and about how we legislate their impact. The smartphone, for example, has been a great boon, but it's also forced parents to give new thought to the relationship between their kids and technology. Cloud technology has been an incredible way to store and manage terabytes of data, but it has also challenged all of us to think hard about privacy, data protection, and the amount of our information that entities outside of our direct control possess.

Right now, weapons technology is undergoing a similarly epochal change—but we haven't had an open and meaningful discussion about it. Companies are currently developing the next generation of lethal and non-lethal tools, but the laws that govern our weaponry were made for an early era of weapons. More information about us is available to the government and private sector, but few people understand how that information is being used and even fewer know the rules that govern that use. How are our laws, norms, and expectations changing to keep pace with these transformations? Extend this thought exercise to include ubiquitous cameras and the surveillance they allow, and the always-uneasy balance between old laws and new tech should lead us to think hard (and fast!) about the law and norms for the future that is quickly arriving.

In some cases, that future is already here. In the professions that my work most closely touches, these questions come up every day. For example, if a body camera is attached to a police officer's chest, how does that change their behavior? How much or how little of that information should be allowed in a courtroom? If a soldier carries a weapon that's designed to incapacitate rather than kill a target, does it make them more trigger-happy or less? Should people be allowed to keep *Star Trek* phasers at home, in the same way that they can keep guns at home? If drone technology could be sent into a foreign city to gather intelligence house-to-house and capture suspected terrorists, what laws and international covenants should govern the use of that technology?

It's tempting to think that there are faraway experts that should determine the answers to these questions, a special council, priesthood, or tribunal. But there aren't. We—the voting and non-voting public—are the ones who need to figure out the answers. The public not only needs to be informed about the choices that are being made, but we also need to play a role in shaping and making those choices. Police officers are responsible for public safety, meaning your safety and mine. The decisions they make and the work they do affects all of us. So their jobs and the way they go about them are public questions.

This is a very nuanced topic, and unfortunately, nuance is often the first thing to go in the modern media. The media has one simple objective: to get your attention. Therefore, negative stories that trigger

people's fears dominate the pages of your local newspaper and favorite news sites. The newspaper adage "If it bleeds, it leads" is truer in the digital age than it's ever been before.

I speak from experience: my company and I have been heavily criticized in the press. I've been critiqued by news outlets, faced off against the National Rifle Association (NRA), and been targeted by various activist groups. Over time, I have learned not to take it personally. Fear sells. Our prehistoric brains are highly attuned to dangers and threats. The humans who survived and passed on their genes are those whose ancestors were attuned to danger, threats, anxiety, and fear. In a world where we usually no longer have to fear that a lion will eat us for lunch, those fear-attuned genes are still with us. So the media companies give us exactly what we respond to: fear and animosity, lots of it.

The media has led many to believe the world is getting more and more dangerous, when exactly the opposite is true. By almost any measure, the human condition has improved dramatically over the past few centuries. Life expectancies have more than doubled, literacy rates have exploded, and extreme poverty has plummeted. The risk of death from war or violence has fallen by over 90 percent (see [www.EndOfKilling.com/progress](http://www.EndOfKilling.com/progress)).

There are certainly risks in the future, and some of those risks carry huge costs. But those risks shouldn't cause us to give up; in fact, they should do the opposite: they should give us hope and the courage to continue to improve the human condition.

OFTEN, AS WITH the opening story set in Raqqa, I'll illustrate my points about the future of killing with scenarios that represent what is possible. In most cases, I draw from weapons technology that already exists or is in early stages of development.

Why borrow from the tools of science fiction for a non-fiction book? Because I want to imagine what might not be possible this instant but could be possible in the not-so-distant future. This technology and its uses can be complicated to explain, and I want to paint clear pictures of what wars, conflict situations, and police actions of the future could be like. I want you to understand these ideas in a way that's visceral and visual, not just intellectual. It's important for those who don't deal in this business every day to understand what it means, and you won't do

that just by digesting data or watching the news. Stories have the power to shake us out of our received notions and rigid habits of thought, to expand our sense of the possible.

The book addresses the different forms and places in which the weapons technology of the future will change how we fight, shoot, kill, arrest, and police. I've spoken to leaders in the field, interviewed a wide range of technologists and military leaders, and come up with a sense of what the next era of this work might look like.

Public and personal safety, homeland security, and national defense will all be irrevocably changed by technology, but it's important for citizens to understand how it's changing, to ask hard questions, and to take an active, engaged role in the process of social change that always accompanies technological change. Big issues about privacy, security, and liberty are at the heart of this transformation. Many of these questions do not have easy answers; many of the answers will challenge our received wisdom, our sense of what's reasonable, and even of what's regarded as good. But we can shape those answers with an eye to making the world safer in the process.

We should all challenge the assumption that killing will forever be part of the story of humanity. Rather than be frozen in the face of that complexity, let's dive in and test, let's try to implement. Not acting without precautions, but not being overcautious either.

To end justifiable gun violence and sanctioned killing in the next few decades, we will need clear and ambitious goals. And in that spirit, the book is animated by four audacious goals, which I believe we can achieve within a reasonable timeframe:

- 1 Policing without killing—by 2030
- 2 Military operations without bloodshed
- 3 Big tech companies helping reduce violence
- 4 Activists who advance progress in police and military institutions

### **POLICING WITHOUT KILLING—BY 2030**

The last decade has been, arguably, the hardest period in the history of police work. Deaths in the line of duty remain a constant risk for every officer. Never has there been more scrutiny on what police officers do,

how they do it, and why they do it. Activists have gone after police in the public, the press, and the streets.

We lament police shootings, and they generate significant energy and emotion within communities. Anger and frustration tends to focus on officers' racism or the malicious intent of those involved in the shootings—and in some cases, those criticisms are right. However, there is too little focus on how we might be able to avoid repeating these problems by rethinking the underlying tool sets and how we can systematically improve outcomes.

It is easy, but intellectually lazy, to label all police officers as racist. That alienates an entire segment of society comprising about one million Americans (and another ten million globally) who have dedicated themselves to a career in public safety. The law of large numbers applies here, as it does in most areas of life: as in any sizable group of people, there are no doubt a few people in policing's ranks who hold prejudiced views. But just because *some* people who hold those views are police officers, that isn't reason enough to paint all police officers with a broad brush of prejudice.

Besides, it doesn't help matters to apply sweeping labels: progress in any field doesn't come from name-calling, stoking anger, and brewing resentment. It comes from thoughtful discourse, invention, and experimentation. And from using hard data rather than raw emotion to measure outcomes and drive better results.

To be a cop in the United States in 2019 can feel like you're perpetually under siege, that you're the bad guy, not the guy protecting others *from* the bad guy. Police officers speak to me every day about what they're up against. They're desperate to restore police work to its admired place in society. They want to be appreciated and respected; they'd rather be loved than feared.

No police officer enters the force looking to kill. And by 2030, I don't think any police officer should have to kill. In order for them to protect communities, and themselves, they will need access to weapons that immediately suppress a threat more effectively than the lethal weapons they rely upon today. By 2030, I believe that the most effective tools for mitigating threats will no longer need to take lives. Alternatives will be accurate, immediate, and more effective than aiming a handgun at a suspect and firing off a round, hoping that you hit your target.

This mission is not a critique of the men and women who do the job of public safety with the lethal force tools they must rely upon today. When we imagine the technologies we need to develop to send humans to Mars (and bring them back again), we aren't criticizing the astronauts of today who haven't gone there yet. Similarly, when we imagine the tools that will make policing without killing a future reality, we aren't criticizing the officers who go to work today with current tools. Instead, I want to motivate the scientists, politicians, activists, technologists, and leaders who can help create the tools to make that future better than our present.

### **MILITARY OPERATIONS WITHOUT BLOODSHED**

Imagine a World War II commander hearing this proposition: two of the five largest land armies on Earth are amassed for a fight. One side has had years to dig in. Both are armed with tens of thousands of soldiers, thousands of tanks, aircraft, artillery, and all the accoutrements of modern warfare. One side attacks . . . and wins complete and utter military victory with close to zero combat casualties.

The World War II commander would be astonished by a war of that kind. And yet, this is exactly the technological and military accomplishment demonstrated in the first Gulf War, enabled entirely by the superior technology of one side. And that's one of the cornerstones of this book: the idea of war without combat deaths isn't as far-fetched as you might think it is at first blush.

In fact, a sure sign of human progress is that deaths from armed conflicts have gone down dramatically over the past centuries. There are a variety of reasons for that, including the end of superpower clashes; treaties that restrict the use of certain kinds of weapons; and the success, so far, of nuclear deterrence. But there's one big blind spot in our national security apparatus that could drive those numbers down even further: the incredible potential of non-lethal weapons to carry out missions more effectively.

Notice I said "carry out missions more effectively." Not "stop protecting lives and property and ideals." Not "stop intervening in cases of genocide or ethnic cleansing." I believe police and militaries can carry out their missions *and* do so without taking life. And I stress that the



technology I'm talking about doesn't mean compromising security for even one second. What I'd like policymakers and the public to understand and explore is the idea that non-lethal options can actually help the military *better* achieve its mission objectives.

Today, the lack of effective non-lethal military weapons is a strategic Achilles' heel for armed forces around the world. Our inability to stop a child approaching a military vehicle without killing them is a weakness that adversaries exploit with brutal creativity. Baiting soldiers into killing innocents has become a powerful strategic weapon.

Through interviews with a range of military thinkers and leaders, I've come to learn how badly soldiers need options that don't require the taking of life to stop a potential threat. I've also come to understand how much intelligence can be lost with a bullet; in many cases, we've killed enemy combatants who would have been treasure troves of information. We gave that information up because there were no effective non-lethal options at our disposal. Furthermore, we continually put soldiers in unwinnable situations because of a lack of available options.

One of the people I work with most closely experienced this firsthand. He was a Marine officer in Iraq. While commanding a checkpoint, he and his troops faced the almost impossible decision of what to do as an ambulance approached them at high speed. They tried signaling for the driver to stop; he didn't. They finally tried their best to fire precision shots at the tires and engine block. The vehicle stopped and the Marines moved closer to inspect what had happened.

Inside they found that they had gravely injured a pregnant woman. They tried life-saving procedures, but it was too late. Both the woman and her unborn child died, with the Marines helpless as the entire ghastly scene played out in front of them. No Marine signs up for military service to kill pregnant women. That is not why they decided to serve their country. We must ask: Surely in an era in which humanity has created the technology for cars to drive themselves, we could find a safer, less lethal way to deal with a car driving up a checkpoint?

First, we must imagine that the end of killing is possible and that achieving it is a goal worthy of pursuit. Then, we must change our thinking to invest in a new direction. Consider this: the plan to modernize the United States' nuclear weapons arsenal, first proposed under

the Obama administration, calls for spending \$1.2 trillion on next-generation nuclear weapons. By comparison, the investment in non-lethal capabilities rounds to zero. If we continue to say that lethal weapons are the only choice we have, that's at least in part because we've chosen to make them the only choice.

This is, in many ways, a problem of perspective and principles. As Marine Colonel Scott Buran, a leading researcher and teacher on non-lethal weapons, told me: "The present military mindset is locked into lethality and kinetic operations . . . It's been an up-hill battle to get the military to change that mindset." For him, it's not so much about the tactics—the actual technology that makes non-lethals work—as it is about the buy-in of the military and their civilian leaders into the idea of alternatives to lethal firearms and weaponry. In other words, this is a strategic and philosophical issue, not an operational one. "We have to get beyond the tactical discussion of non-lethals," he said. "We've got to move into the ethical, the philosophical, and even the theological to move people's hearts and minds. It's hard enough to change their minds. But you will have to change their hearts."

What we need, and what I believe we can bring about, is exactly this shift in both hearts and minds. It will be difficult to change an institution as big and tradition-bound as the military. But rapidly evolving threats require fresh solutions, and the seeming impossibility of solving a problem is no excuse for not trying.

## **BIG TECH COMPANIES HELPING REDUCE VIOLENCE**

Big tech companies are at the forefront of the information age and the digital revolution. These companies draw some of the brightest minds of our generation. And yet they've walled themselves off from solving some of the world's most pressing problems.

Google, among others, has decreed that it will not allow the military to use its technology. Period. Facebook has proclaimed that its response to gun violence is to block ads for any and all weapons manufacturers.

That's it? That's what the biggest and most-talked-about companies are doing to address the pressing problems of our time? Banning contracts and blocking ads?

Once you become a publicly traded company—once you possess the size, reach, market cap, and talent that these companies have—you also carry an obligation to put that talent to use against problems that cry out for answers, not just problems that are fun, happy, comfortable, or profitable.

Imagine, if you will, Google deciding that a crack team of its engineers would work on the problem of school shootings. Or Facebook deciding that it was going to use its data and artificial intelligence capabilities to bring down crime rates in a neighborhood. Not in the spirit of reluctant cooperation with the government, but as a leader of the pack, a company that believes that its reserves of talent and wealth could be put to the most difficult challenges our society faces.

At the moment, what these and other big tech players have decided is that rather than do the hard work of rolling up their sleeves and fixing the problems of violence and crime, they will let someone else do it. This is a serious dereliction of duty by some of the most talented men and women of our time. We need our brightest minds on our toughest problems. Can we make school shootings a thing of the past? Can we eliminate death from warfare? We don't have concrete solutions to those questions, but I know that it's going to take all our talent to answer them. And that talent often resides in Silicon Valley companies that have chosen to look the other way, often (somewhat ironically) claiming a moral high ground in the press for doing so.

## **ACTIVISTS WHO ADVANCE PROGRESS IN POLICE AND MILITARY INSTITUTIONS**

For my entire career, I've worked (and often struggled) with activist groups. The American Civil Liberties Union (ACLU), Amnesty International, Human Rights Watch—I've tangled with them all. I've also taken a drubbing from the powerful NRA lobbyists, who successfully blocked the airlines from using non-lethal weapons so that guns would be the only approved option in the 2002 legislation that armed airline pilots in the wake of the September 11 attacks.

These discussions are often about finding the right balance between very different worldviews, which is why we need serious discourse

between different stakeholders to map out the future. Even as they've sometimes been resistant to new approaches, I've learned a lot from these groups. We don't always agree, but they are as committed to their causes and points of view as I am to mine.

That said, I've also seen activist groups evolve in ways that have become counterproductive and actually work against the causes they stand for. It's a common pitfall that people will become defined by—even consumed by—what they are against rather than what they are for.

What they stand against broadens until it becomes unrecognizable and even counterproductive. Being against violent police encounters, for instance, can degenerate into being against police work altogether. Being anti-war can lead you to become anti-soldier. People will rarely admit when this happens, but it's human nature to allow one lens through which we see part of a problem to become the only lens through which we see all problems.

Thus groups that seek to reduce excessive force in policing can end up resisting any changes in policing, even changes that would help reduce injuries and stymie the use of force by police. I am speaking here from personal experience. Independent studies have repeatedly shown that TASER weapons reduced the number of people injured by police. But because TASER weapons were perceived as a new type of force (and indeed, because it was any type of force), they were immediately decried by some activists. Those groups came out strongly against this new type of force without sufficient regard to what it could actually do on the ground to reduce adverse outcomes.

In the most productive cases, activists engage to drive toward improved outcomes. In chapter 12, I will describe the collaboration between the ACLU, the Cincinnati Police Department, and my company that resulted in a dramatic reduction in police shootings.

Unfortunately, sometimes activist groups thwart the very progress they'd like to bring about in the world. International human rights organizations, for example, have been actively protesting the use of any non-lethal technology in warfare. They argue that having access to non-lethal weapons would make warfare more likely. In other words, because weapons would be available that would make killing less frequent, nation-states might be more likely to use weapons, period.

The idea that non-lethal technology would increase the propensity to conflict simply doesn't make sense to me, and no study confirms or supports this view. But the objections of international human rights organizations still carry weight in the public and press, and many a non-lethal project has been scuttled because an activist group opposed it.

That's a problem. It obstructs progress, and it prevents us from saving lives. I think activist groups can be far more effective if they work constructively with governments and private sector entities to implement new solutions and strategies.

IT IS VERY EASY to get caught in the "good" versus "bad" debate. I grew up playing cops and robbers, a game rooted in the idea that there were good guys and bad guys. But as I have grown up, I have learned that life is much more complex than a child's game. Sure, there are some real-life bad guys. And there are some brutal cops. But it's far more common that there are tragic situations. For example, people struggling with mental health crises or drug intoxication that expresses itself in a violent and deadly outburst. Police officers are affected by the same things all human beings are, and they can crack under the pressure of seeing a friend or colleague killed. They can find themselves in a murky situation where they make a bad decision—or even lose control and make a vindictive one.

Those decisions and difficult choices carry enormous consequences, well after the conflict ends. How many soldiers, sailors, airmen and airwomen, and Marines have come back from the bloodshed in Iraq and Afghanistan with moral injuries because of what they've endured? And how many of those things have been done because there weren't better, less lethal, more precise munitions available to achieve their objectives?

These aren't hypothetical questions. They are the everyday, real struggles of people who are charged with carrying out violence in our name. These people deserve better than they've been given. They also deserve a public that is better informed about the choices they are forced to make. I believe that once the public understands these issues, they will become exasperated by the fact that we don't already have better options available.

History, I believe, is moving in the direction of peace—toward a world in which killing is abnormal, rare, and unnecessary. In 1945, the American military demonstrated the awesome and destructive power of nuclear weapons; never in history had a weapon been designed with more lethality. And yet, less than four decades later, in 1983, President Ronald Reagan called on scientists to solve the problem their research had created: “To turn their great talents now to the cause of mankind and world peace, to give us the means of rendering those nuclear weapons impotent and obsolete.”

His proposal—the ill-fated “Star Wars” plan to intercept missiles in mid-air with an elaborate ballistic shield—didn’t go far. But the idea at the heart of his plea, that technology and the people who build it could reduce killing and not increase it, has been carried forward by a new generation of innovators, whose goal has been to make weapons of all kinds “impotent and obsolete.” Success today is no longer a simple and indiscriminate increase in force; there’s no longer a prize for a bigger “boom.” In fact, the goal of modern weapons is the precise opposite of their predecessors: to minimize the number of deaths and collateral damage. To eliminate the threat without eliminating the life.

If this book paints an optimistic portrait of the future—good. We have reason to be optimistic. Even if the headlines blare reports of crime and war, there is a quiet revolution taking place in weaponry, one that could make state-sanctioned killing a thing of the past. But we need to encourage those changes, discuss the ramifications of new technologies, and work to build the future we’d like our children to live in.

We’re at a powerful moment in the history of weaponry. I think we can, within our lifetimes, turn guns into museum pieces and relics of the past. And in so doing, we can bring sanctioned killing to a decisive and necessary end. The story of violence is as old as the story of humanity. We’re about to write a new chapter in it.



## CALLING FOR PROGRESSIVE ACTIVISTS

**I**N THE EARLY 2000s, the Ohio chapter of the ACLU was one of the most active in the country. Executive Director Scott Greenwood had spent over three decades as a civil rights attorney who had focused on police use-of-force cases. In fact, he was the most prolific civil rights attorney with the most cases against police in the Federal Sixth Circuit. When possible, Greenwood tried to create change within police departments, but when that wasn't possible, he would often end up suing police departments for misconduct. He had seen every angle on this problem.

Following a number of consecutive police shootings involving white officers and minority suspects, the streets of Cincinnati exploded in rioting and violence. Three days of carnage and mayhem passed, and by the end, the city instituted curfews. Greenwood filed suit against the police department. "This wasn't the occasional or random in-custody death or officer-involved shooting. This was every day for a few months," he told me.

For him, and the community, the process of policing was badly broken. "Nobody was getting serious discipline and the officer-involved shootings just increased." Greenwood successfully obtained a consent

agreement that put him on a civilian oversight board with a role in setting policy for the Cincinnati Police Department.

He started by going to the city's legal department and then to the police chief, saying, "We have to stop this. There has to be a better way. We know that there are ways to use less force and my promise then was that I will not file another individual lawsuit against the police department as long as you are constructively engaged with me and with the ACLU of Ohio in addressing these problems." The conversation began a collaborative process between Greenwood and the city.

When Axon first approached the Cincinnati Police Department, we were told that we'd have to present to the oversight board and receive their approval for the TASER devices. Based on prior experience, we knew this would be difficult. At our first engagement, Greenwood was clearly skeptical. For him, giving the police a new weapon seemed like a terrible idea. "A police force that used too much force on too many people at the time . . . we didn't think should be trusted to use yet one more weapon," he said.

So he asked a number of pointed questions, and he expressed skepticism that more or newer weapons would somehow lead to fewer deaths. He was very direct: "You want to sell these to this agency. I'm going to block it unless I know how they work. I want to know as much about these weapons and how they're used as any person other than the engineers who designed them."

To his credit, he agreed to come to a training event and see how the weapon worked. For some context, Greenwood is a soft-spoken intellectual with a lawyer's eye for words and logic. So it surprised us a bit when he agreed to volunteer for a TASER device exposure. We shared both technical and field data about how TASER devices worked, and case studies where they significantly reduced injuries to both police and the public. He took all of that information and decided that the practical experience of undergoing a TASER device exposure would help him understand the effects of the weapon and what impact it might have in the community.

In the end, after studying the research and having a TASER device used on himself, Greenwood approved a pilot program. When that pilot proved successful at reducing police confrontations, he approved



widespread deployment of TASER devices to front-line officers. He also led an effort to track their results and measure their impact. Just because he had approved a pilot didn't mean he wasn't going to remain a watchdog.

As a result of these efforts, Cincinnati went from being torn apart by police shootings and subsequent riots to a period of relative tranquility. Greenwood himself described the impact in the following terms: "Cincinnati PD didn't fire a shot for twenty-seven months. They went from eighteen dead young African-American men over a period of not too many years to zero shots fired. Therefore, zero people were killed. That is an absolute, out-of-the-park grand slam." Looking back on the work he did, Greenwood commented, "It was one of the most impactful things I have seen to improve the lives of people living in communities beset with violence and aggressive policing."

At the national level, the ACLU has been a major force behind the nationwide adoption of body cameras by police officers. Body cameras, like any technology, are imperfect. They are not a panacea. But there's reason to believe, as I discussed earlier (see chapter 9), that officers who know their actions are being recorded will act in a more accountable manner. And body cameras allow the public to keep tabs on those we entrust to commit violence when necessary in our name, which ought to be a must in any democracy.

Real progress doesn't occur all at once. It happens piecemeal, and it often requires compromises and setbacks. Working in the field of technology, that's something I know from painful, first-hand experience. But it's a lesson that activists interested in making real progress should keep in mind as well. Those who stand to make the biggest difference in our world must know that making a difference is usually measured in fits and starts—but that progress generally depends upon people being willing to say what they are for, not only what they are against.

The lesson from Scott Greenwood's experience isn't that TASER weapons are good. It's that activists can play a constructive role, that they can help both technology providers and police be more thoughtful and careful while also fulfilling the mission that their organizations believe in.

Activists who collaborate rather than critique can take some heat. And Greenwood's experience has been no different: he has dealt with

criticism for his willingness to work with both police leaders and technology companies. When he began working on constructive solutions, it upset some who saw his collaboration as selling out. He especially upset the diehards who see collaboration as weakness or complicity with “the system.” But few of those critics can point to anything like the positive impact that Greenwood has achieved. He can offer numerical, incontrovertible proof that he’s changed his community for the better.

These can be highly polarizing issues. Those who strongly favor law enforcement can take the side of police and the military uncritically, even in cases where they’re in the wrong. And in the same way, activists can paint police or the military with broad brushes—believing that all of them have a predilection for violence or racism—even in situations where officers and soldiers show restraint and compassion.

Social progress relies upon solution-oriented leaders willing to reach across those ideological divides—to put their egos to the side and find the shortest route to results. No one has a monopoly on the right answer, and as the CEO of one of the more influential companies in this space, I’ve seen enough to know that the best answers tend to come from many different directions and perspectives.

I DON’T WANT to understate what activists and organizers are up against when they do their work. Making change means taking on entrenched systems of power—economic power, political power, or cultural power. It’s hard work, and it probably means losing more battles than you win. Activists might not like to hear it, but I identify with those struggles, because making the TASER dream a reality has meant going up against entrenched systems, too. And I realize that today, some activists may view me and my company—ironically—as representative of the entrenched system.

But activists are up against something else, too—human nature. Humans have a tendency to define issues in adversarial terms. For example, if you are a peace activist, it’s easy to become opposed to the military. If you are a civil rights activist, you can be implacably against any police. If you are an environmental activist, you might be resolutely against the energy companies.

Those are easy positions to take; the talking points have been written and rehearsed for decades. What's much harder is to stay focused on the sometimes-abstract goal you're after. It's harder, in other words, to be "pro peace" than it is to be "anti-military." It's harder to be "pro civil rights for all" than it is to be "anti-police." That's why I believe that most protests end up directing their energy against something or someone rather than promoting an idea or concept. Ideas and concepts don't speak to the gut in the same way that opposition does; emotion brings people to the barricades.

But those same emotions affect not just how we speak to other people about the causes we care about, but also how we think about them. They lead to blind spots in our thinking. In chapter 2, I discussed some of the cognitive biases that keep us from embracing change, even when it's change that will, on the whole, make us better off. One of the most important of those biases is the tendency to make the wrong comparisons when we're evaluating potential changes. Rather than asking, "Is this an improvement over the status quo?" we all too often ask, in effect, "What are the flaws?"

As a result, once we identify any flaws in a proposal—and every proposal has flaws—we're primed to reject it. That's the case even if it's less flawed than its real-world, status quo competitor. Most of us have an inbuilt conservative bias against change, and we have to fight to identify it and correct for it if we actually want the world to change for the better. Unfortunately, that's as true of activists, even the most progressive activists, as it is of the rest of us.

Think, for example, of the phenomenon of NIMBYism ("Not in my backyard"). In cities like San Francisco, activists have long stood against the kind of new construction that could bring down housing costs. They've identified plenty of ways in which building new housing falls short of perfection: it disrupts existing neighborhoods; it enriches developers; and, of course, no one likes construction and extra traffic. But their efforts also exacerbate the problem of San Francisco being the most expensive city in the United States, one that's inaccessible to the working class and, increasingly, to the middle class. It means less social mobility, less opportunity, and less change—all of which are pretty unprogressive outcomes.

IN AN INCREASINGLY polarized world, the assumption is that progress has to be all or nothing. Trade-offs, compromises, and sacrifices in the pursuit of progress aren't allowed, and any accident or misstep is treated as a damning condemnation. And that's troubling, because trade-offs, compromises, and sacrifices are most often the way that progress is achieved.

I don't begrudge people who have a big goal connected to a deeply moral purpose. If anything, I worry about people whose big goals are disconnected from a moral compass. But to engage the analogy a bit, on a long journey, a compass alone isn't enough. As it was put wisely in *Lincoln*—a film whose central question is what kinds of compromises President Lincoln was forced to make on the path to achieving his goals—a moral compass will “point you true north from where you're standing, but it's got no advice about the swamps and deserts and chasms that you'll encounter along the way. If in pursuit of your destination, you plunge ahead, heedless of obstacles, and achieve nothing more than to sink in a swamp—what's the use of knowing true north?”

Activists often have a powerful, admirable sense of true north. It's what motivates their work, and it helps generate the moral conflict that attracts attention to their cause. But a moral compass tells us very little about how to act strategically to achieve moral goals. So environmental activists can become laser-focused on the sins of the energy companies, but they are liable to miss the broader strategic picture of how they may positively influence those same companies to change their behavior. They may miss opportunities to promote technologies that might help to dramatically reduce pollution. Instead, they focus adversarial energy on companies that pollute, even when there may be other, viable ways to work with the companies to help both the activists and the companies achieve their ends.

I recently spoke to the CEO of a company that sold software to energy companies that helped them reduce pollution by improving their operations. Because of his work, he was often invited to speak at environmental conferences or would find himself on recruiting trips to colleges. He would open his presentations by explaining how his company both helped the environment and made energy companies run better.

But the idea of both sides winning fell flat with his audiences. Many of the attendees would tell him that they viewed energy companies as evil enterprises run on a pure profit motive—that any action taken to help them was, by definition, an action that harmed the environment. He could prove this wasn't true based on the work he was doing, but his argument fell flat. So he learned to edit his presentations to focus only on the pollution he was reducing—and not mention that he was helping the companies' bottom line at the same time.

In the same manner, some peace activists' disdain for the military or the police can prevent them from engaging constructively with those institutions in order to change them for the better. The fate of the Active Denial System—the non-lethal heat weapon that I discussed in chapter 7—is an excellent example of the way this pattern has stood in the way of real, progressive change. The ADS, to recap, was a non-lethal weapon that used directed energy to disperse crowds. When it was first developed, I believed—as I still believe—that it had the potential to begin a shift toward a military that could achieve its missions with significantly less loss of life. But so far, that potential has gone unrecognized.

I believe anti-war activists, who were a major force lobbying against the adoption of the ADS, made a serious mistake. They won the battle against that specific technology, but they set back progress toward a world that is less deadly—a world that they surely are fighting for. Activists focused on the frightening aspects of a new technology (*The military is building a death ray!*) at the expense of the more hopeful and realistic aspects (*The military is finally moving away from lethal weapons!*). It was easy for them to focus on what might go wrong (*The ADS might malfunction and kill by accident!*) at the expense of a fair comparison with the status quo (*The ADS could replace weapons like the M16 that kill or maim with every use!*).

In that situation, the activists chose a stance of moral purism over pragmatic progress. If you're categorically opposed to the military, anything the military does is wrong. Victory becomes anything that slows the military down. That stance prevents you from driving the military to do better—in this case, by investing in weapons that don't kill, and by progressing toward a future where there is less collateral damage and fewer innocent lives are lost.

In defeating ADS, activists achieved a pyrrhic victory: they killed more than just ADS; they have nearly killed the concept of non-lethal military options. The military has seen no return on its investment in non-lethal technologies, besides public relations problems. The institutions promoting non-lethal approaches are getting defunded and deprioritized to the point of irrelevancy. That is the worst outcome possible for everyone involved—the activist community, the military, and humanity at large.

AN UNINTENDED consequence of protest is that the institutions that activists protest against can become less responsive to their pleas. If leaders of organizations believe that they will be criticized no matter what they do, then why not continue the status quo rather than try something new?

International activists have gone after non-lethal weapons for, perversely, making warfare more deadly. “We had a real complaint from some on the humanitarian organizations that this is going to make warfare too easy,” General Anthony Zinni told me. “That by making war less lethal, you were making it more attractive and thus more likely to happen. So therefore we should not pursue non-lethals, and we should keep lethal weapons. I mean, the logic just defies rational thinking.” Even in reasonable discussions about the future of acoustic weaponry or laser-based weaponry, organizations would launch pre-emptive strikes. “You’re going to blind people, they’d say,” Zinni remembers. “Even though the technology was going after temporary incapacitation, but they didn’t see that.”

I’ve seen this first-hand in some of my interviews with military experts. They talked about how the PR risk of deploying the ADS system was a significant deterrent to its use, and further investment in safer and more humane options has dried up. I’ve seen this same pattern play out with TASER technology. Anti-police activists have shouted from the rooftops that, because electricity has at one time or another been used to torture human beings, any weapons that use electric charges are by definition dangerous and shouldn’t be put in the hands of cops.

We’ve pointed out that life-saving technologies like pacemakers and defibrillators use electricity, too, as does any home appliance or even

the laptop these words are being written on. But the image of electricity-as-torture-method is a powerful, visceral one. Perhaps inadvertently, the activists have ended up promoting the non-electric, lethal weapon in the hands of every cop in the United States: the gun.

During the height of the controversy over TASER weapons, a police chief told us bluntly that the department was better off from a public relations perspective using their guns. While vastly more dangerous, for both civilians and police, guns were well understood and accepted. “If we shoot someone with a gun, that’s something the public understands. But if we shoot them with a TASER device and something bad happens, we will be villainized,” he said. As I keep pointing out, we don’t judge the status quo and disruptive innovations on a level playing field. We hold the latter to a far higher standard. Stun guns, the police chief told me, would spark a public backlash in a way that sticking with the status quo, bullets, would not.

It’s been frustrating to see activists who share our goals come out against us. Rather than being focused on our common goal of ending police killing, many activists demonized us for developing alternative weapons designed to reduce human injury and deaths. Several leading human rights organizations led an intensive, multi-year campaign to ban the use of the TASER technology on the basis that it might be used by thuggish dictators to torture—as if restricting the tools would prevent the practice.

Calls for TASER technology bans got newspaper headlines—which is one of the most visible impact metrics for non-governmental organizations (NGOs). If you measure success by media impressions, the campaign against TASER weapons was a success. NGO officials were quoted in numerous front-page stories around the world. They changed the public mood about TASER weapons, and their campaign derailed programs to deploy TASER devices in a number of countries.

But should that constitute a success for human rights and human safety? The upshot of their effort is that more police around the world carry weapons that are lethal, with no meaningful alternative. By demonizing TASER technology, these well-intentioned groups were, inadvertently, lionizing guns. Focusing on the ways that non-lethal

weaponry can go wrong leaves us a world of highly lethal weapons as the status quo.

The result harms us all: by my estimation, activists successfully delayed the widespread deployment of non-lethal weapons in many countries by at least a decade. When I spoke to one activist researcher about the matter, her response was revealing. I had offered the idea that perhaps they could work with my company and police agencies to help institute best practices. Unlike electricity from wall outlets or car batteries, every TASER device has a built-in audit log that records every use, and TASER devices could be outfitted with cameras that could record every use to ensure accountability.

Would they want to join forces to help create oversight guidelines and mechanisms to help ensure these technologies would be used in a manner to augment the benefits and reduce the risk of misuse? Would they want to see some of our data and understand our work? It would send a powerful signal if a technology company, police accountability activists, and police leaders worked together to drive meaningful change with new oversight mechanisms. The researcher thought for a moment, then responded, “If we become a part of designing the system, then we could lose our credibility as an independent watchdog.” This frustrates me to this day. What she was saying, in effect, was that remaining a critic was more important than fixing the problem she was criticizing.

I WANT to be clear about one thing: human and civil rights organizations have done remarkable work on behalf of political prisoners and advancing human rights around the world. Their work in those domains is admirable. I believe that these activists weren’t malicious in launching campaigns against us; they were just misguided. Their decisions can be chalked up to the same bias that keeps us from exchanging an imperfect status quo for a less-imperfect change.

NGOs face the same pressures that all large organizations, for-profit or non-profit, do. Just as corporations fund their operations by generating sales, non-profits raise donations by generating public interest and support through calling attention to outrages. A viral outrage reliably generates more interest than a position of “This is bad, but on balance



it may lead to an improvement over a status quo that is also bad. Let's keep an eye on it and see." And as a result, NGOs can become conservative forces in spite of progressive intentions. The urge to criticize the actions of police agencies or companies or militaries can undo positive actions, slowing down all change, positive and negative.

The activist community in San Francisco has followed a similar, stultifying playbook. Following several fatal police shootings in the early 2000s, the San Francisco Police Department sought approval from their civilian police commission to deploy TASER weapons as an alternative. Activists staged raucous protests at every hearing, on at least one occasion chanting "Fuck you, Steve" to drown out testimony from one of the experts before the police commission.

Those tactics worked: as of 2018, the SFPD has yet to deploy a single TASER device. That makes it an anomaly. As of this writing, San Francisco is the only major city in the country that does not give its officers access to TASER weapons. The reason is clear: a highly active anti-police activist base has prevented progress by resisting all efforts to introduce alternative force options.

The results are plain for all to see: since 2000, there have been more than a hundred officer-involved shootings in San Francisco. Many of those have resulted in the suspect being shot and killed. In most of those interactions, I—and others—suspect that a non-lethal option could have prevented the situation from escalating to deadly force. And yet, police officers in San Francisco have no choice but to use and fire their guns in these situations.

IN THE COURSE of developing the TASER technology and the field of non-lethal weaponry more generally, I've gotten to know a broad cross-section of the public. I've worked closely with scientists and engineers, with politicians and public officials, with law enforcement officers and military personnel, and with activists in the non-profit sector.

One thing I try to keep in mind is that essentially no one, in any of these groups, gets out of bed in the morning and sets out to make the world a worse place. They all want to make a contribution. They want to make progress. It's essential to remember that, even when we have

serious conflicts over the right thing to do, on a deeper level we're on the same side. We all set out to make this a safer, more peaceful world; we just have different perspectives about how to get there.

I particularly try to remind myself of this when I come into conflict with activists who have a different vision of the future than I do. Like them, I want this to be a less violent world. Like them, I want to be a "progressive"—in the original sense of that term, meaning someone who inspires and drives change. Even when we disagree—and we do disagree—I firmly believe that we see ourselves in the same way.

It's easy to decide what you are against. It can be much harder to define what you are for and then to fight for it, even in the face of critics. Protests can create the energy to drive reform. Constructive collaboration converts this energy into results. The world needs activists who want to change things for the better. Your passion can catalyze reform and lead to constructive solutions that propel true forward progress.



## GOVERNMENT IN A WORLD WITHOUT PRIVACY

**W**HAT IF PRIVACY were no longer possible? What if governments were omniscient, with access to all of the details of our lives? How would we rewrite our laws to accommodate such a world?

Of course, that situation is far from a utopia. Privacy is worth protecting, and I don't think we should give up the fight for it. But we also need to face facts: our hyper-connected world makes privacy less and less viable—and less and less valuable—every day. Rather than thinking reactively about threats to our privacy, we need to get ahead of those threats. We need to ask how our lives, our laws, and our governments should change in a world where privacy seems to be shrinking by the day.

We want governments that are both data-driven and well informed, committed to protecting our lives and liberties. We cannot expect, nor do we want, our government to operate in ignorance or in a state of technical incompetence. We cannot protect the society of the 2020s by using the technology of the 1970s. As facial recognition and ubiquitous data suffuse society, changing everything from how we log in to our smartphones to how we connect with like-minded people online,

it is unreasonable to expect we will retain the same experience of “privacy” that we experienced in a world before the internet. Returning to the past is not an option. But thinking proactively about the future is.

We can try to regulate away the government’s ability to use data to achieve the goals we set for it as citizens, but all too often, those efforts are likely to prove futile or counterproductive. We are living in a data-driven world. Modern corporations are expected to use data to better serve their customers. We should expect the same from our governments—to use data to keep us safe and to ensure fairness and equity. It’s not realistic to push governments to be oblivious to data. But it is realistic to ask them to use data for the public good. In this chapter, I’ll explore some of the ways in which governments are drawing on new tools to protect the public while minimizing unwarranted intrusions of privacy.

### **OVERSIGHT AND DATA SEARCH CONTROLS**

When government agencies make use of data to carry out their functions, citizens should insist on strong, judicious oversight. Agencies should log search queries into their databases, and they should keep strict controls on access, to ensure that the people viewing and analyzing sensitive information do so with proper approvals and sufficient justification. I stress *justification*, because the same search of the same data can have wildly different meanings depending on the purpose for which it’s carried out. Consider a search through a license plate database: it’s one thing when it’s used to locate a kidnapper and something else entirely when it’s used to identify and track vehicles at a peaceful protest. I wouldn’t want to give up the first use out of fear of the second, but I also wouldn’t want to ignore the risks of misuse.

A balanced approach would put appropriate controls in place to enable the use of data for public safety while minimizing the risk of its use against the public interest. Fortunately, we live in an era in which software can be designed to do exactly that: we can, for example, create inalterable audit logs that show exactly when data was accessed and by whom. Many such systems today require the user to enter a reason for the search, as a way of ensuring additional oversight. For

sensitive data or more exhaustive searches, a pre-search approval process can be implemented, involving different levels of authority depending on the sensitivity of the search. Just knowing that these systems are in place can deter bad actors within government agencies from abusing their power.

I've learned about these systems from personal experience. My company, Axon, hosts a large data set that now includes almost fifty million gigabytes of often-sensitive police body camera videos. Our engineers have worked hard to ensure that the data is stored so that only authorized personnel from each agency can access their agency's digital evidence. And every time the data is accessed, that instance is recorded in an inalterable audit log. Even though I am the CEO of the company, for example, I have no way of accessing video data from agencies that store information with us.

Access controls and search logs are important factors that government agencies should require—both of themselves, and of private sector partners who provide data hosting services. But more generally, it's not only privacy-compromising technology that's evolving; so are the controls and oversight that protect that technology from abuse. We have the ability to secure data in ways we could never have imagined. That ability can help us think more creatively and less fearfully about the use of data in the public interest.

## **THE ENCRYPTION-PRIVACY DEBATE**

Following a 2015 mass shooting in California, the FBI made headlines when it attempted to force Apple to unlock contents of the iPhone owned by the shooter, Syed Rizwan Farook. The iPhone case presented an interesting challenge: on the one side, there was a legitimate request from the FBI to help extract information from a smartphone that belonged to a dangerous person. That phone likely contained information that would help investigators further their case and understand the killer's motives. On the other side, a leading technology company argued that creating a tool to extract that information from the phone would require placing every iPhone on the planet at increased risk of a cyber-attack and privacy breach.

As with so many polarizing issues, people picked sides, leaving no room for compromise. Either you were for privacy, which meant total encryption and no cooperation with government authorities, no matter the public safety threat. Or you were for unrestricted government surveillance.

Enter into this debate Ray Ozzie, former chief software architect at Microsoft and an early software innovator who helped create Lotus Notes, one of the first blockbuster software products. As reported in an April 2018 interview in *Wired* magazine, Ozzie was troubled that the debate had become increasingly politicized, and that many in the tech industry considered it an unsolvable problem. He sought to address the impasse by creating a solution that could solve the problem of protecting users' security while ensuring that government could access data under exceptional circumstances.

Ozzie turned to a two-party solution: technology companies would use the same methodology they used to "sign" critical software updates, such as updates to the iOS operating system on the iPhone. These software updates authenticate the software that upgrades your phone.

If a hacker were to gain access to the keys to the update system, they could install a software update on your phone that would give the hacker complete control. Hence, the handling of the keys is critical to maintain the security of the operating system, and every smartphone in the world. It's possible to use the same method to authenticate access to encrypted data, without introducing any new security risks. Technology companies would simply have to agree to cooperate with public safety agencies in cases in which a court deems cooperation necessary.

There remains some debate over whether such a system could operate securely on a large scale. And, of course, the privacy questions grow even more pressing when the governments that ask to cooperate with Apple are authoritarian ones. But Ozzie's approach still suggests the possibility of transcending old and stale privacy/security debates. It suggests that, even in an age of polarization, it's possible to strike a dynamic balance between those two goods. That's progress in the best sense.

## **SURVEILLANCE AND SENSORS EVERYWHERE**

We live in a camera-saturated world. Cameras are on our phones, our ATMs, our doorbells, our streets. That's just scratching the surface of the many mechanisms by which our movements are being watched and taped.

Today, the handling of these video sources is haphazard at best. But imagine if, knowing that cameras were as much a part of our lives as stoplights, we figured out a way to consent to the use of video data by law enforcement in extreme circumstances. One example is the app Noonlight: smartphone users set up the service to hold their personal data and transmit it to local 911 dispatchers in an emergency. We could imagine similar services to connect private cameras to police forces. As discussed earlier (see chapter 5), Chicago Police Department already has tens of thousands of private cameras feeding into its surveillance center. Ring (now owned by Amazon) and other home surveillance providers are offering services to share video within neighborhoods or directly to law enforcement.

Surveillance data from these sources can be used in a way that keeps our streets safer, while also protecting privacy. Perhaps the best example of how it might work comes from audio, not video, surveillance. ShotSpotter is a network of sensors installed in many major cities that helps detect the sound of gunshots. If a gunshot is picked up on a network of microphones placed around a city, the location is beamed to police agencies, who can respond rapidly. This technology is not to be underestimated: many gunshots go unreported in high-crime neighborhoods, and ShotSpotter is often the only method by which police know that a shooting has even taken place.

But as helpful as the technology can be to solving and preventing crimes, it comes with a downside: it turns out that the microphones required are also sensitive enough to record nearby conversations. That raises the possibility of surreptitious recordings that might violate wiretapping laws. To mitigate such concerns, ShotSpotter microphones automatically stop recording four seconds after they are triggered—enough to pick up gunshots, but not enough to record a conversation.

A major challenge for video surveillance that protects the public but is still consistent with privacy will be developing controls that work in

a similar way in more difficult cases. A gunshot is a pretty unambiguous sound—but what about the sorts of crimes that we might imagine a street-level surveillance camera capturing? Can software identify a mugging in progress, for instance, with the same precision with which it can identify a gunshot? If this book has insisted on anything, it's that such problems—as difficult as they may seem—are more solvable than they might appear at first glance.

### **THE FULL-TRANSPARENCY APPROACH**

Thus far, I've been arguing that the same technology that's commonly perceived as threatening privacy can also help us to develop advanced, privacy-protecting controls. But there's also a simpler approach on option: call it the full-transparency approach. Under this paradigm, we would demand transparency from public safety agencies through laws that allow any person to request data that they collected. In general, transparency is a powerful concept, and it's likely one of the best tools to make sure that agencies that can gather data about us are held accountable.

In practice, though, this approach gets complicated. Forcing governments to open up access to their data could deter abuse of surveillance powers. Or it could democratize surveillance, eroding privacy even further and faster.

Take the following example: under the Public Records Act of 1972, the State of Washington mandates that government agencies cannot deny requests for records if the requester is anonymous or the request is too broad, nor can they deny requests to protect an individual's privacy. Instead, they must redact only the details that are deemed sensitive and release the rest. The law errs on the side of public transparency, but while this sounds reasonable in the abstract, in practice it creates a nearly unworkable set of constraints.

Beginning in 2014, Tim Clemans began sending release requests to agencies across the State of Washington, with a focus on police body camera footage. A spokesperson for the Seattle Police Department likened the requests to a distributed denial of service attack, a common cyber-attack where hackers overload a website with traffic that causes



the site to crash. Eventually, Clemans created a bot capable of sending thousands of requests each day, overwhelming the ability of agencies to fulfill them. Body camera video can contain a wide range of private information that often needs to be redacted, from faces to names, addresses, and evidence of various types of crimes and victimization. Artificial intelligence isn't yet up to the task of automatic redaction, so agencies must do it manually. That can involve a frame-by-frame process, in which a human operator manually reviews and redacts the thirty images contained in every one second of video.

Paradoxically, the transparency required by the Public Records Act has created a practical impossibility for many agencies in the state. They have responded by not implementing body camera programs—reducing the transparency of policing. Even the laws intended to increase transparency to avoid abuse are themselves subject to the risk of abuse.

If you had begun this chapter hopeful that there would be a silver bullet, a single approach that would answer the challenges of balancing privacy and public safety, I am sorry to disappoint. Technology is moving much faster than regulations can keep up, and there is no one right answer to solve the problem. Even the answers that appear logical, like the Washington Public Records Act, may prove untenable in the face of the deluge of data and the challenges in meeting competing regulatory requirements, such as the directive to “release everything but redact all private information.”

Technological tools, such as advanced AI redaction capabilities, may ultimately solve the cost and logistics problems before legislative efforts resolve them. Given the difficulty in predicting how technology will develop and how legislation will interact with it, regulatory frameworks will need to be agile and responsive.

I would argue that the erosion of privacy will have at least one beneficial effect: it will force governments to either enforce laws fairly or face a serious crisis of legitimacy. And assuming that they do not want to face such a crisis, governments will be pushed to change laws that they are unable to enforce fairly.

More broadly, we must face the fact that the world is ever more connected. As our social relationships move online, our personal data

becomes part of a global information archive of unimaginable complexity. This same global internet is where terrorists recruit, communicate, and coordinate their activities. It is where we store our money, whether in digital bank accounts or online investment accounts. It is where we keep our most private memories and photos and conduct some of our most intimate conversations. It is where people express their cries for help or post their warnings of an impending violent outburst. As more of our lives shift online, public safety resources must move online as well. Whether they are fighting child sex crimes, terrorism, or cyber-theft, we could not exclude law enforcement from the online world even if we wanted to.

What used to be private thoughts or relationships are now digital trails of transactions, conversations, images, and videos. It will be difficult to fine-tune regulation of law enforcement's access to information. *Look here, but not there. Ignore this, but not that.* It can begin to feel like we are sticking our fingers into the holes of a giant dam of information that is bursting all around us.

Mark Zuckerberg, the CEO of Facebook, spoke for many leaders in government and technology when he suggested that "privacy is dead." I'm not ready to believe that just yet, and I still value keeping certain information away from others' prying eyes. But even if it's not dead, privacy is not what it once was. Our laws and our governments need to keep up.

## ENGINE OF VIOLENCE: ENDING THE WAR ON DRUGS

IN THE PREVIOUS chapter, I wrote that the erosion of privacy will force a choice on governments: they can enforce laws fairly or face increasingly difficult crises of legitimacy. The erosion of privacy also makes unequal enforcement of the laws more blatantly visible to the public. I think the best way to illustrate the point is by taking a closer look at an embattled policy: the American government's war on drugs.

The war on drugs is a powerful driver of killing in the United States today, creating an ecosystem that perpetuates violence and funds violent gangs by way of a shadow economy. If we are going to end killing, we should take a hard look at policies that perpetuate violence.

Let me lay my cards on the table: the racially and socially biased enforcement of some of our harshest laws is an injustice none of us should blithely accept. But that biased enforcement is inherent to the war on drugs as it has been carried out for decades.

If a student at Harvard uses cocaine, the general assumption is that he was a generally good person who made a bad decision. If he's caught, he'll likely get a slap on the wrist. Even more likely, he won't get caught in the first place, because campus police aren't generally assigned to parade through the dorms on high alert for cocaine. In the housing

projects of Chicago or Miami, it's another story. If a kid gets caught with cocaine there, he's likely going to jail. His life will be put on a tragic trajectory of incarceration, criminality, heightened surveillance, and limited opportunities that can be impossible to alter.

By now, it's conventional wisdom that the war on drugs targets kids in communities of color and in low-income communities, far more than whiter and more affluent communities. But think about what this means: if the US government took seriously its commitment to equally and fairly enforce the laws on the books, narcotics officers would target places like Ivy League dorms, Silicon Valley offices, and Hollywood studios with the same zeal they bring to inner-city street corners.

That doesn't happen. Instead, drug laws are enforced with the harshest consequences on the least influential parts of society. If we fairly and truly enforced the drug laws across society, we would incarcerate a much larger segment of the population, including much of its leadership.

This is where privacy and legitimacy enter the picture. In the prior century, the government could offer a plausible-sounding excuse for unequal enforcement of drug laws. In places like inner cities, it could claim, drug use was relatively visible to law enforcement; it happened on street corners or in well-known crack houses. It was harder to know what went on inside a Harvard dorm than on the street corner of a city. Respectable places are respectable because they don't look from the outside like places where the law is being broken.

This has always been more of an excuse than a justification. But one upside of the fact that privacy has changed is that this excuse is no longer serious or credible. As more and more interpersonal communication moves online, the state could, if it chose, "see" into the Harvard dorm just as easily as it can see into an inner-city neighborhood. And as worrisome and invasiveness as that can seem, one benefit is that the state can no longer pretend to be unaware of crimes it doesn't bother to prosecute.

When the government can't plead ignorance, it has one of two options. The first is to admit to unequal enforcement of the laws—to say, "Yes, we're aware of what's going on in the Harvard dorm, but we're not interested in doing anything about it." I remain at least marginally hopeful that no democratic government could hold that line for very long.

Which brings us to the second option: scrap laws that we can't or won't enforce fairly. After all, it's not law enforcement's job to pick which laws to enforce. We want elected legislatures making laws, not police departments. And in a world where governments face increased pressure to enforce their laws fairly, the conversation about laws and lawmaking will change. The question won't be, "Who should bear the unfair brunt of the war on drugs?" It will be, "What laws could we support, if the government really did enforce them equally on all of us?"

And if we consider the question honestly, there's no way we could tolerate the war on drugs under that standard. More broadly, the changing nature of privacy could mean that there are new laws that are needed and old laws that need scrapping.

THIS BOOK came from the conviction that a huge amount of the killing in contemporary society is preventable, either through technological or policy change. The drug war is a prime example of the latter. Far from reducing violence, America's drug laws exacerbate violence in two key ways.

First, the war on drugs creates a shadow economy that is beyond the rule of law, leaving participants to enforce their rights and contracts themselves. That phenomenon is commonly called "street justice."

Second, the unfair overenforcement of these laws in communities of color undermines faith in the police as a fair and just protector of the community. When people lose faith in the government to protect them fairly and justly, they are more likely to take matters into their own hands, which also increases the rate of preventable violence.

In his book *The Better Angels of Our Nature*, Steven Pinker shows that the overall rate of violence has dropped dramatically as societies transitioned from ungoverned clans to modern states with a functioning public safety and justice system. His research shows that the risk of death from violence has dropped by a factor of five hundred times over the past thousand years, as modern government arose and took on the responsibility to protect its citizens and provide a framework to enforce their rights and resolve their conflicts without resorting to violence.

Pinker argues, convincingly, that inner cities have significantly higher rates of violence because key aspects of those communities are similar to "stateless" societies. In particular, inner-city economies

depend on the illicit drug trade, a market in which participants cannot rely upon the state to protect and enforce their rights. As a result, much as medieval Europeans turned to an “honor code,” or settlers in the Wild West resolved their differences with revolvers, residents of the “stateless” parts of the United States are more likely to protect their interests through violent means, filling a void created by the absence of reliable law enforcement. No drug dealer is about to call the police if a customer doesn’t pay, so they take matters into their own well-armed hands.

Drug gangs and medieval knights would seem to have nothing in common—until you look at what motivates their behavior. In the context of their environment, violent behavior is a rational choice for protecting their interests. Without a functioning state that protects those interests, violence—particularly as a pre-emptive choice—is a logical, even if illegal and immoral, choice. The honor code of modern street gangs is not dissimilar, then, from the honor code of medieval Europe: enforce your rights with swift and severe violence upon those who have threatened your interests, before they have the chance to do the same.

Pinker further points out that reductions in violent behavior are predicated on members of society delegating the protection of their interests to the state. But this delegation only works if the members of that society believe that the state will fairly and impartially protect their interests. If they believe that the state is random or capricious, or worse, that the state actively targets them because of their race or other factors beyond their control, they will no longer delegate the protection of their interests to the state. They’ll revert to violence to protect their interests.

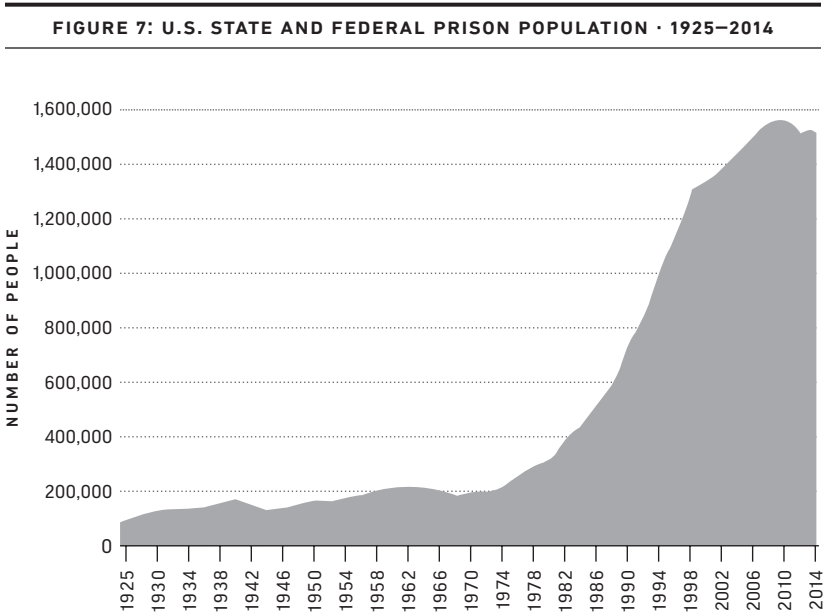
Consider the current dynamic between police agencies and many communities. The issue isn’t whether law enforcement officers are personally racist—certainly, the majority are not. The issue is that our laws, especially our drug laws, are enforced in a racially disparate way. But even if you want to dispute that fact, it’s even harder to dispute the fact that the enforcement of drug laws is widely *perceived* as biased. This perception, in turn, drives members of some communities to lose faith in law enforcement and to refuse to delegate the use of force to the state. In this context, perception is reality. Communities that no longer

trust the police to protect them will take matters into their own hands. Building community trust is more than a feel-good initiative; it's the foundation required for a community that renounces vigilantism and violent protection of self-interest.

Beyond driving violence and leaving vast swaths of the country as partial exceptions to the hopeful trends that Pinker describes, the war on drugs also has other harmful consequences. It contributes to the United States' status as home to the largest prison population on Earth—home to almost one-quarter of the world's prisoners, and nearly twice as many as China. It fuels an illicit economy, in which violence becomes the logical option for dispute resolution. It undermines faith in law enforcement. And yet, despite the heavy price tag, we have little to show for it all in terms of declining drug use. Consider the charts in figures 9 to 12, which lay our failure out in graphic terms.

First, look at the explosion of the American prison population (figure 7).

Notice that it begins to increase exponentially in the early 1970s, when the Nixon administration first declared the war on drugs.



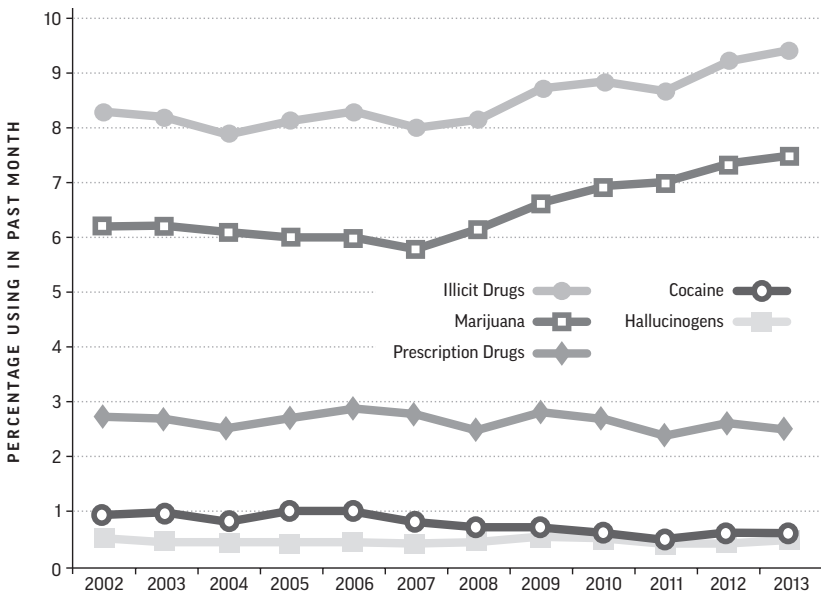
But if we are incarcerating so many drug users and dealers, are we at least reducing drug use? If we are spending billions on incarceration, are we at least achieving the stated policy goals of the war on drugs? Again, the numbers speak for themselves.

Consider figures 8 to 10, all from the National Institute on Drug Abuse.

What do these charts tell us? First, they tell us that illicit drug use is growing across the entire population (figure 8). Specifically, it's even growing among more "conservative" demographics such as adults aged fifty to sixty-four (figure 9). Even as we have been executing the war on drugs, drug use is flat or increasing.

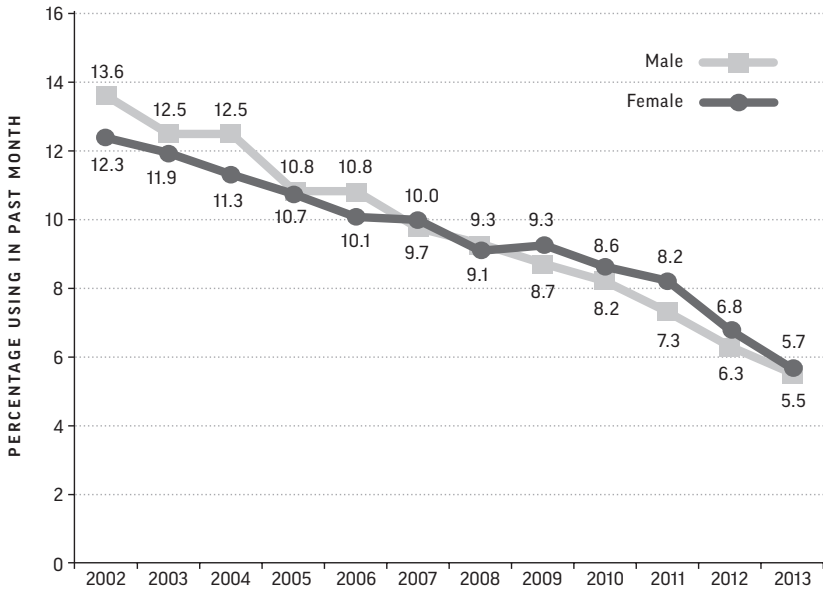
And yet there's one substance whose use is dramatically in decline: tobacco (figure 10). We have prevented countless kids from taking up the smoking habit, prevented countless cases of cancer, and saved countless lives—all without making tobacco illegal or creating illicit markets. We've regulated it, we've advertised against it, we've built social stigma against it—but we haven't ever called for an enforcement-driven "war on tobacco."

FIGURE 8: PAST-MONTH USE OF SELECTED ILLICIT DRUGS

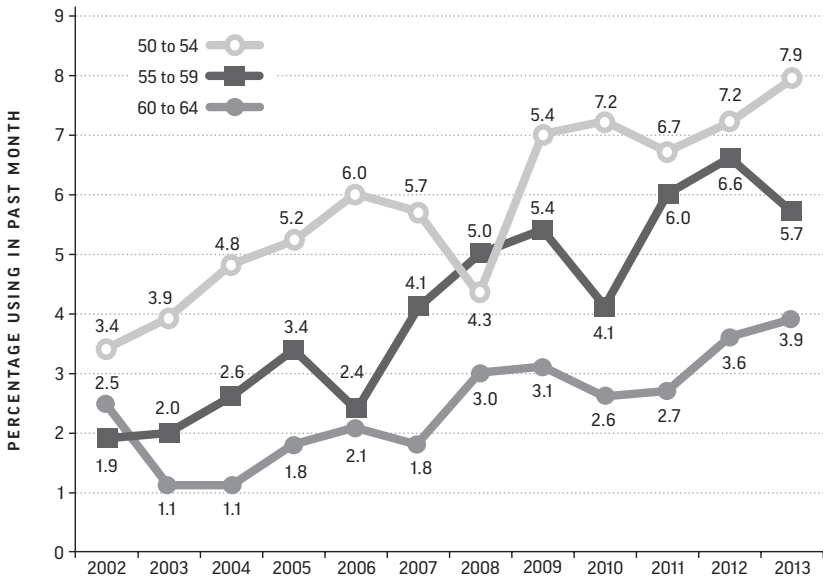




**FIGURE 9: PAST-MONTH CIGARETTE USE AMONG YOUTHS AGED 12 TO 17**



**FIGURE 10: PAST-MONTH ILLICIT DRUG USE AMONG ADULTS AGES 50 TO 64**



We have a proven strategy for driving down the use of a harmful substance, and it looks far more like our anti-tobacco policies than the war on drugs. We've made illicit drugs illegal, and we've fiercely enforced laws against their use—all without putting a dent in that use. On the contrary, we've created a criminal market that fuels gangs and violence.

I can't put it better than Richard Branson, founder of the Virgin Group and a member of the Global Commission on Drug Policy: "As an investment, the war on drugs has failed to deliver any returns. If it were a business, it would have been shut down a long time ago. This is not what success looks like."

Let me return to my point on biased enforcement. According to the *Washington Post* in 2015, the United States incarcerates 716 out of every 100,000 people, or a little under 1 percent. But if we consider figure 10 and assume that at least 9 percent of the population are using illicit drugs, we would have to theoretically increase the population of our prisons nine-fold if we fairly enforced the drug laws across the entire population. In other words, our system only functions today because of the institutionally biased enforcement of the laws we have on the books—because most drug users escape the harsh penalties set by our laws, but those on whom the penalties fall are usually already the most disadvantaged.

Could a nation really afford—politically, socially, or financially—to incarcerate more than a tenth of its entire population? Almost certainly not: the system would collapse. We can't afford to incarcerate all drug users, nor should we want to. So the system limps along, depending on biased and partial enforcement just to stay alive, costing us billions in wasted dollars and millions of wasted lives, without accomplishing its goals.

I DON'T make this argument because I'm in favor of widespread drug use. Quite the opposite. My family has experienced the scourges of both the opioid and the methamphetamine epidemic. My family has also been hard hit by tobacco use and abuse. I never met my paternal grandparents, because they both died in their fifties from cigarette-related causes (emphysema and stroke).

Because of my family history, I ought to be inclined to more fervently back a "war on tobacco" than to support a "war on drugs." But

as a parent, what I care about are effective strategies that reduce the negative consequences of using drugs or tobacco overall. And I am even more focused on eliminating the policies that incubate violence. Every available fact tells us that our anti-tobacco strategy has outperformed our anti-drug strategy: reducing usage and avoiding the heavy costs of violence, incarceration, and mistrust of police.

Effective strategies need not emphasize toughness, a point that is borne out by evidence from around the globe. A 2014 study of anti-drug programs of different countries by the Home Office in the United Kingdom concluded, “There is no apparent correlation between the ‘toughness’ of a country’s approach and the prevalence of adult drug use.” In Portugal, a breakthrough model has shown how a country can reduce drug use, using the tools of public health while avoiding an over-emphasis on law enforcement. Portugal decriminalized many drugs in 2001 and then built programs to help addicts. Over that decade and a half period, drug use and related effects are going down. Portugal’s strategy appears to be outperforming the United States’.

These are controversial views for someone in my position: my company’s primary customers in law enforcement disagree with the decriminalization of illicit drugs. In my discussions with law enforcement officers, I’ve often heard compelling argument for keeping the laws against drugs: these laws help law enforcement officials investigate and remove violent offenders from the streets.

I take that argument seriously, because being a police officer in the United States is a difficult and frustrating job. The constitutional rights meant to protect us all can make it difficult for law enforcement to arrest and remove those who threaten our safety. Most officers have a sincere belief that they need every tool—including the laws on the books prohibiting illicit drug use—to effectively investigate and arrest violent offenders. For them, without probable cause related to drug infractions, it could be much harder to get violent offenders off the street.

I believe this is true, in a practical sense. A police officer squares off against violent, dangerous people who don’t have to play by the rules. Police, on the other hand, are constrained by a complex set of rules that govern all of their actions. Add to that the frustration of seeing so many of these offenders get released by the courts because of some

legal technicality (or the lack of sufficient court and prison capacity), and you can understand why police aren't ready to give up on drug laws.

But if we look at violence over the long term, I strongly believe that Pinker is right: our drug laws are creating a stateless economy that incubates violence. If we removed the laws that criminalize the illicit drug trade, police officers may have more trouble getting violent offenders off the streets in the short term. But in the long run, we can reasonably expect to create a system that produces far fewer violent offenders.

Don't get me wrong: I don't think we should let violent offenders off the hook for their crimes. But if we know we have created a flawed system that leads to violence, we should address that system at its roots—and not tinker at its margins. Our world would be better off with fewer violent criminals, period, not with laws that create those criminals and then force police to deal with them.

As someone who works closely with police around the country, I also object to the idea of asking police to put their lives on the line every day to fight a war with no clear path to victory. We should not ask police to risk their lives enforcing laws that, by all accounts, it appears we don't, deep down, want them to enforce. Even the most ardent law-and-order conservative is likely to have a relative who has a drug problem, and when it comes to our families, we have no desire to see them go to jail. And remember: if the United States really walked the walk on drug enforcement, we'd have more than a tenth of the population in prison.

So to sum up: we're in a war we have no real intention of winning, and with no clear plan to win. In a war like that, you rethink your strategy. You don't keep sacrificing lives—you change your approach. And when you're winning a similar conflict with a different strategy—in this case, the war on tobacco—you borrow the best of that playbook.

To emphasize again: I am not advocating or promoting drug use or abuse. Too often, this debate is characterized in extremes: you either want to send every drug user to jail, or you want to celebrate the mind-opening possibilities of free-flowing drugs in our society. I reject that false dichotomy. You can accept that drugs destroy lives, without therefore believing that the drug war is the best way to reduce drug use. We should find a middle path, one where we gain the benefits of decriminalization with the long-term reductions of violence in black

market economies. That path would also lead us to create programs to drive down drug use and its attendant negative effects.

There are voluminous books dedicated to analyzing the criminalization of illicit drugs. My intention here is not to dive into the complexities of drug policy, but rather to use this area to illustrate the challenges of applying old laws to a new world where privacy cannot be what it once was. I'm also motivated to tackle this issue because of its deep connection to the overriding goal of this book: to reduce violence in our communities.

These are complex issues, and there's no single answer. But I'm motivated by a vision of a world in which police officers are truly public safety officers. To achieve this vision, we need laws that allow them to advance society's best interests, tools that avoid creating lasting harm, and training that helps them to become their communities' champions. All of this begins with balanced, effective laws. To create this ideal, we need to make sure the laws we are asking to be enforced strike the right balance between protecting individual rights and maintaining a peaceful, safe, and functional society.

We owe it to the men and women in blue to take a hard look at what laws we actually want them to enforce, fairly and consistently, for all of us. And we owe it to our citizens to have laws that we fairly enforce and adjudicate. If a law can't live up to that standard, we must consider whether it is past its shelf life.

I'll come back to the point I made at the outset: a democracy should only tolerate laws that are enforced for everyone. We're not willing to enforce our drugs laws for everyone. We've seen how the existing laws drive increased violence by creating an illicit economy, one in which participants turn to violence to protect interests that cannot be protected by police and courts. Those laws are ineffective and even actively harmful to public safety. So we should simply, and responsibly, end them.



## CONCLUSION

# A PATH FORWARD

**W**E CAN, AND must, think about violence, use of force, and the security of society in a new way. We can, and must, move past the notion that killing is the only means of securing the peace. And we must shift toward a new paradigm, one in which non-lethal force is the default solution.

I am confident that one day we will see non-lethal options as the only rational choice. I hope I've shown how our notions of acceptable violence have changed over time and how they continue to change. And I hope you've come away with some appreciation for the remarkable new technologies that will, one day soon, make the end of killing a real possibility.

But I hope I haven't given you the wrong idea: the path ahead will not be easy. It won't be simple or without difficulties. Working on the front lines of technology, I've learned first-hand that the forces arrayed against social and technical progress are powerful and should not be underestimated. I think that these forces draw their effectiveness from a basic aspect of human psychology—what I have referred to as the phenomenon of the new versus the now. We humans are naturally risk-averse animals. When faced with the possibility of a radical change—a new tool, a new policy, or a new way of organizing our societies—we don't compare it to the status quo, dispassionately weighing each for pros and cons. We instinctively compare it with perfection, focusing heavily on the flaws in what is new rather than the improvements over

what exists today. In other words, as soon as we discover a problem with the new—and there are always problems, because humans are incapable of creating perfection—we tend to discard or disregard it.

This phenomenon manifests itself in media coverage that generates controversy and gains public attention by fixating on the downsides of new approaches: the prototype that fails, the pilot program that goes over budget, the experiment with ambiguous results. It also manifests itself in entrenched bureaucracies, in both the private and public sectors, made up of people who benefit from the status quo and might stand to lose if it changes. It manifests itself in regulations that protect current stakeholders rather than enabling change in the public interest. And it manifests itself in the way we think of risk.

In this book, I've outlined some radical possibilities for the future of non-lethal force—possibilities that may seem as “out there” as the TASER seemed a few decades ago or gunpowder must have seemed to armored and mounted knights. It's natural to worry about the risks inherent in developing and implementing the technologies I've talked about. But if there's one thing I hope you'll take with you, it's that there is always risk on both sides. The risks of the status quo become so familiar to us that they start to seem invisible. And while there are risks in some of the approaches outlined in this book, we must consider the risks of not taking them—the risks of remaining in a world where the default is to build peace by dealing out death.

I'm passionate about getting risk assessment right because I've already lived through the process I've described. If you can think of a line of criticism directed at a non-lethal weapon, I've been on the receiving end of it. All of those criticisms were directed at the TASER weapon. It was a toy from *The Sharper Image*. It was a weapon for wimps. It was forced on cops by the suits at city council. It would trick cops into becoming dependent on them—they'd forget how and when and whether to fire their guns. After TASERS gained widespread adoption, the narrative focused on the dangers of the weapon, with the unrealistic expectation that it would make high-risk situations risk-free. It was a “kinder and gentler” weapon, when the whole point of weapons is to be unkind and ungentle. And of course, when TASER weapons were misused, the technology, more than the misuse itself, was suspect.



In the abstract, each of the critiques can seem reasonable. However, we do not live in an abstract reality; we live in a reality marred by great imperfections. Given the state of the world as it is, we must measure the new against the status quo, not in abstract isolation, which leaves us comparing to perfection. Put the status quo and the future on the scales and weigh them fairly. And eventually, if these sorts of arguments hit home with just a few influential leaders, then the future is on the way to becoming a status quo of its own. The path of almost all transformative technology goes from resistance to reluctance to acceptance to dependence. That's the path we can expect from all of the technology outlined in this book.

As Peter Diamandis put it, "The day before something is truly a breakthrough, it's a crazy idea." Today, an end to killing sounds like a crazy idea. Totally non-lethal policing sounds like a crazy idea. A military that conducts operations without bloodshed sounds like a crazy idea. Activists and tech companies cooperating with police and military institutions sounds like a crazy idea. A world free of school shootings sounds like a crazy idea.

Today, it may sound laughable. Tomorrow, it will sound as if it had been inevitable.

## ABOUT THE AUTHOR

**R**ICK SMITH founded TASER International in 1993. As the TASER device became ubiquitous in law enforcement, Smith pushed the company beyond weapons technology and toward a broader purpose of using hardware, software, and artificial intelligence to make the world a safer place. Under his leadership, the company—now called Axon Enterprise—has grown from a garage in Tucson to a NASDAQ-listed global market leader in conducted electric weapons, body-worn cameras, and software. Smith graduated from Harvard University with a BA in biology and later earned a master’s in international finance from the University of Leuven in Belgium and an MBA from the University of Chicago. Learn more at [www.EndOfKilling.com](http://www.EndOfKilling.com).