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978-0-521-88325-2 - Bioviolence: Preventing Biological Terror and Crime

Barry Kellman

Excerpt

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Introduction

This book is about species treason – giving aid to the enemy in the perpetual war between humanity and microbes. Using disease, traitors to humanity could inflict death tolls beyond the great historical scourges and unleash panic of biblical proportions. These traitors crucially impart the one quality that microbes lack: they think. The microbes, operating through remarkable processes of trial and error, have never designed a strategic battle plan to resist the onslaught of modern medicine. But their new ally can strategize and find people's most sensitive vulnerabilities. This ally of disease is as dastardly as can be imagined for this ally is human.

Bioviolence is the infliction of harm by the intentional manipulation of living micro-organisms or their natural products for hostile purposes. It is the ultimate act of terror, making everyone potentially vulnerable. It's a crime that must be prevented. It should be a crime whether the inflictor is a State or a person, a terrorist or a criminal, or just a lunatic. Broad prophylactic measures to heighten security against biothreats should be implemented in every nation. Law enforcers worldwide should be prepared to interdict this crime. These are complex challenges with many intricate details requiring elaborate twists and turns through policies that implicate science, diplomacy, health care, and law enforcement. Yet, nothing here is so abstruse or beyond human intellect as to impair policy progress.

This book is a brief – an argument – that: 1) bioviolence is a threat that merits serious attention; 2) there are wise strategies that can reduce bioviolence threats; and 3) those strategies have serious ramifications that demand important changes in global governance. This argument is provoked by the realization that no other problem facing humanity is so potentially cataclysmic and has been so inadequately addressed.

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THE BIOVIOLENCE POLICY FAILURE

In recent years, vast monetary and scientific resources have been devoted to developing vaccines and antidotes against the most feared bioagents. Efforts to combat disease have dramatically improved, motivated in part by escalating concerns for natural pandemics. Some threats have been mitigated, and we are gaining a better understanding of lethal microbes and how to stop them. Many developed nations have prepared rapid response capabilities for a bioviolence event; in some regions, sophisticated exercises have been conducted to improve coordination and identify unanticipated difficulties.¹ Various international and regional organizations have taken modest steps to become more vigilant in addressing bioviolence threats. Interpol has initiated an entire program for bioterrorism prevention to train police and coordinate relevant information. Most important, national and multilateral intelligence communities that are broadly attentive to terror and criminal threats are certainly alert to risks associated with intentionally inflicted disease.

Nevertheless, it is striking how little has been done to make it hard to be a bioweaponeer and shocking that all these resources have been expended without anything like a global approach that might actually make us safer. Across a broad panoply of policy arenas, readily adaptable initiatives to prevent bioviolence are stalled. Throughout the vast majority of the world, outside of perhaps two dozen developed States, bioviolence preparations could proceed without substantial chance of detection and could inflict unimaginable damage against unprotected populations. A handful of threats receive substantial attention, but many easily accomplishable attack modes are virtually ignored.

In short, advancing policies to prevent bioviolence is what the international community does worst. It must be asked why bioviolence has not already been addressed, why international and national leaders have done such a remarkably poor job in diminishing bioviolence risks leaving us all virtually naked to a bio-attack from a powerful military, group, or single person. No other threat presents such a stark contrast between, on one hand, severity of harm along with global denunciation but, on the other hand, a failure of leadership to reduce risks.

Although many disciplines – science, history, politics etc. – have relevant responsibilities, this is fundamentally a book about international law. The thesis here is that humanity is vulnerable to bioviolence because, at this time, international law is unable to devise, implement, and enforce

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preventive policies. Such policies are potentially available and effective, but they demand progressive changes in prevailing legal concepts.

It is only because bioviolence has not yet taken a truly catastrophic toll that humanity tolerates international law's infirmity. That bioviolence perpetrators have not yet capitalized upon this failure is grounds for solace but not confidence. How long our luck will continue will be decided by the wrong people for entirely the wrong reasons. We can take preventive measures now, or we can hope that bioviolence continues forever to be only a hypothetical threat. The former option is complicated and has costs; the latter option is irresponsible.

THEMATIC FOUNDATIONS

Three Crossroads

Bioviolence stands at the intersection of three transformative phenomena. First is the changing condition of strife. State-to-State warfare with explicit battlefield confrontations is, for the most part, a thing of the past. In place of warfare, however, are three types of strife: slaughter of defenseless groups (Cambodia, Bosnia, Rwanda, Darfur, etc.); terrorism; and proliferation of weapons of mass destruction. Significantly, bioviolence is ideal for today's forms of strife and could magnify their already horrific implications. Using bioviolence, a handful of culprits can ever more easily cause profound harm to enormous numbers of people.

Second is the globalization of pandemic disease. For decades, infectious calamities have only peripherally affected geopolitics. There have been stunning successes against smallpox and polio; measles, rubella, diphtheria, and other maladies persist in sharply confined domains. But initially HIV/AIDS, then SARS, and more recently the Avian Flu have undermined the perception that modern medicine can altogether abate infectious disease. Today, disease threatens international peace and security and has the potential to unhinge global order.² Bioviolence can initiate, propel, or ride upon disease's potential for devastation. Disease and strife are the Achilles' heels of our age; bioviolence is where they intersect.

The third phenomenon here is the radical pace of change in the biological sciences. Bioscience is a dynamic phenomenon that stretches from inquiries about humanity's most existential search – what is the architecture of life? – to the development of medicines for improving health. If eras can be labeled according to the technology that is most transformative

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of humanity (Stone Age, Industrial Age, Nuclear Age), then ours is indisputably the Genomic Age. The cracking of the human genome symbolized a seismic shift not only of technology and pharmaceuticals but, more fundamentally, of how we perceive “humanness.” Our commonality as a species has never been so tangible, and never before have we so had to face possibilities of altering the essence of what we are. Capabilities that might emerge in a decade are almost beyond estimation. Indeed, the advance of bioscience is a major theme of this book. And, unfortunately, these advances can endow perpetrators of bioviolence with previously unimagined abilities.

Law for Humanity

Bioviolence is a threat without borders to the human species. Like other challenges facing humanity – for example, global warming – it simply makes no sense to try to insulate any particular country or region from the threat. To prevent bioviolence requires policies that focus on humanity as a *biological species entity*.³ These policies must be implemented everywhere with centralized governance.

A sizeable bioattack will have transnational implications, exposing our human commonality and demanding new modes of cooperation. The opportunities for bioviolence are everywhere, and perpetrators might emerge from virtually anywhere. They can prepare their attack through easy networks of communication and transport lethal devices in defiance of traditional notions of sovereign jurisdiction. Moreover, the effects of igniting a severe bioviolence pandemic will not respect borders or distinguish among victims according to their race, religion, or nationality; the effects will quickly bind humanity into a suffering collectivity. Said Gro Harlem Brundtland, “Today, in an interconnected world, bacteria and viruses travel almost as fast as e-mail and financial flows. Globalization has connected Bujumbura to Bombay and Bangkok to Boston. There are no health sanctuaries.”⁴

The challenge is how to confront these threats in a flattening world where accelerating circulation abets the ready movement of science and technology and makes each of us targets of unnamed perpetrators of catastrophe. A prevention strategy must be global. Every State and many international institutions must make a serious commitment in concert.

Looking forward, it is striking how little attention has been devoted to the changes in governance that will be necessary in a world of rapidly mutating bioscience and associated technologies. Yet, discussion of such

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policies makes it instantly apparent that the world is very awkwardly organized. Today, efforts to initiate global policies rapidly crash on the shoals of an anarchic division of the world into almost two hundred sovereign fortresses with separate claims to independent and unfettered decisional power. This is not the place to call for a radical restructuring of the Westphalian system and centuries-old concepts of national sovereignty, but it is imperative to see that this global threat inherently shrinks the planet into an interdependent neighborhood. Nations must realize that adamant proclamations about the inviolability of State sovereignty are, in this context, a recipe for disaster.

There is another sense in which bioviolence prevention must be expansive: policies must be sustainably effective for a species-community that is prospectively multigenerational. Prevention is not something that will be done once, then humanity can move on. Prevention must be a process of decisions that reconfigure our approaches to science, law enforcement, and public health; these reconfigured approaches will carry forward in perpetuity. Whatever decisions are made now, whatever actions are taken now, must withstand the test of time. Action is needed now because the threat is on our doorstep, yet what we do to thwart bioviolence will entail changes that our successors will inherit. Their interests must be considered as we make our decisions.

To consider how to prevent bioviolence is to open peepholes into the near-term future of international law and to ask what institutions and rules our grandchildren will want us to have created. Ultimately therefore, this book is something more than a policy manifesto about current threats of biological weapons in an era of non-State terrorism; it is an exploration of how global governance should evolve to address challenges of advancing science and technology.

TERMINOLOGY

Bioviolence is used here instead of the far more common term *bioterrorism* because of the many disputes and ambiguities about the meaning of *terrorism*. There is no globally accepted definition of *terrorism* despite years of United Nations negotiations, yet the term suggests conduct of: 1) a non-State actor that is 2) motivated by a political or religious agenda. A State can support terrorists, but *terrorism* is not a term that typically applies to deployment of military capabilities. Nor does the term apply to criminals motivated exclusively by financial gain or lunatics motivated by idiosyncratic alienation or revenge. Another ambiguity attends how to

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distinguish a terrorist from someone seeking to overthrow a repressive regime.

Where to draw precise lines that separate terrorism from other categories of wrongdoing or use of armed force is, from this book's perspective, an irrelevant exercise. The objective here is more generic. There are real differences among the many potential perpetrators of intentionally inflicted disease, but those differences are secondary to the challenge of preventing any and all hostile plots to make people ill. The term *violence* captures the phenomenon without regard to the actor or the motivation so long as it is deliberately malevolent.

Notably, there are other risks associated with advancing bioscience, such as use of genetically modified organisms with unpredicted consequences, but this book advocates policies against violence – that is, wrongful activity that is intended to cause injury. Also important to note is that the focus of this book is mass catastrophe, not biohomicide or biovandalism. Although there is no specific demarcation between murder and mass murder, the reality is that little in this book will prevent someone from lacing salmonella on his or her spouse's pasta. The term *bioviolence* here implies an act that has far more extensive consequences.

Used to similarly generic effect here is the term *bioweapon* and the verb to *weaponize*. Among some diplomats, a *weapon* is something possessed or procured by a State military; by definition, a non-State actor cannot make a bioweapon, only a biodevice. Besides being semantically clumsy, this distinction is artificial. What is a State's *bioweapon* that has been handed to a non-State actor; is it suddenly no longer a *weapon*? It is nonsensical to use different terms to describe the same thing on the basis of who has it. In this book, a *bioweapon* is simply what someone uses to commit bioviolence, and *weaponization* is any process that is designed to make a pathogen into a bioweapon. Correspondingly, *bio-offender* refers to someone who would commit bioviolence whether a State actor, terrorist, lunatic, criminal, or anyone else.

The word *pathogen* here refers to any live agent or poison created by a live agent (a toxin) that causes disease, whether in humans or other living beings. The scientifically sophisticated reader knows that the outer boundaries of what might be referred to as a pathogen – distinct from a pollutant or even a mechanism (nanotechnology) – are increasingly fuzzy. Once again, this term is used broadly and flexibly to refer to any disease agent that has a living source.

Critically, the term *prevention* deserves clarification. It does not refer to eliminating risk. The policies recommended here will not confer an

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ironclad shield from bioviolence. *Prevention* is used here in the same way that “seatbelts prevent car accident fatalities” or “a low-calorie diet prevents diabetes”—of course, some seatbelt wearers will die in accidents, and some careful dieters will get diabetes. *Prevention* is not an absolute term. Yet, compared to the prevailing situation that in many respects is heedless of palpable risks, adoption of proposed policies can make us safer even if not totally safe. Absent a prevention strategy, the threats will grow larger and more unmanageable.

PRESENTATION OF THE ARGUMENT

This book is comprised of two parts. Part I's three chapters describe the problem of bioviolence and explain how it evolved to its current intractable condition. Chapter 1 is a brief essay about why bioviolence should be a matter of pressing concern. There are easily understood plots that could have debilitating consequences. Chapter 2 explains bioviolence: what is it, how is it done, and how technological advance is changing the phenomenon. There are many bioviolence options; science is opening new opportunities and making existing methods easier. Chapter 3 addresses the question of who has perpetrated bioviolence and who might perpetrate it today. Whether viewed from historical experience or from today's news, it is clear that many people are not inhibited about inflicting disease.

Part II recommends the global strategy for preventing bioviolence. Chapter 4 explains the foundations of that strategy based on criminalization of wrongful conduct. Chapter 5 focuses on complicating bioviolence by making it difficult to get needed pathogens and capabilities and by strengthening law enforcement's authority to detect and interdict bioviolence preparations. We need to know far more about the capabilities for committing bioviolence, and we need to raise hurdles to their wrongful applications. Chapter 6 considers how the potential for harm inherent in bioscience research should be understood and how science can develop resistance against bioviolence by creating vaccines and medicines. Globalizing policies to promote bioscience presents critical financial challenges as well as potential conflicts with intellectual property protections.

Chapter 7 discusses public health preparedness to deal with bio-attacks by hardening targets, planning response interventions, and establishing quarantines if necessary. Although preparedness measures can be useful in mitigating the consequences of a bioattack, excessive reliance on public health is false security. Chapter 8 considers the unique problems of State bioweapons programs and today's challenges for the Biological Weapons

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Convention, including nonlethal bioagents and national biodefense programs. Also relevant here are measures to ensure dismantlement of the former Soviet Union's bioweapons stockpiles. Chapter 9 discusses how relevant policies should be progressively governed under the rule of law and supervised by three United Nations entities. In all, the book is intended to provide a multidimensional blueprint for today's decision makers and concerned citizens to improve humanity's security.

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PART I

**The Bioviolence
Condition and
How It Came to Be**

1 Why Worry?

If someone really despises 21st Century civilization, what can be done? For the truly diehard nihilist, passionate terrorist, or zealous lunatic, there are frustratingly few options. At some point, they have to realize that conventional attacks just are not doing the trick. The 9/11 attacks, the bombing of the Madrid and London subways, and numerous smaller attacks have all put civilization on edge, but history marches inexorably forward more or less as it was before. The United States and its allies are resolute, continuing to assert materialistic values and using their force of arms and media to propound those values to everyone else. A few thousand people can be killed, yet western armies still traverse the world. The sun never sets on a U.S. military base.

There is, however, one way to shred the predominant social fabric. It is how the deity has done it since the days of pharaoh: inflict a scourge. The Bible is replete with lessons of how the infidels were beset by pestilence – the holy wrath of the righteous. What more symbolically justifiable way to provoke an apocalyptic confrontation between the forces of good and evil? Causing collective death and misery may be seen as performing a sacramental reckoning that morally justifies mass murder.

The threat of bioviolence is unique among perils facing humanity, and those who would perpetrate bioviolence are villains in a class of their own.

WHY BIOVIOLENCE IS DIFFERENT

Bioviolence is ultimately about destruction of living organisms, not buildings or equipment. In operation, bioweapons – the devices of bioviolence – kill or impair people (or animals or vegetation) within range, then dissipate leaving victims as the only evidence of their use. Bioweapons are very quiet.