Mental Immunity

Infectious Ideas, Mind-Parasites, and the Search for a Better Way to Think

Andy Norman

With a Foreword by Steven Pinker

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Foreword by Steven Pinker

Andy Norman's *Mental Immunity* comes in the wake of two disasters of the twenty-first century—the Covid-19 pandemic, and the presidency of Donald Trump—and connects them, though not with the familiar linkage of Trump's disastrous mishandling of the government's response to the pandemic. No, Norman suggests that the pandemic may have morals for the mystery of how a paragon of irrationality—defiant of truth, science, expertise, and constructive discourse—could have attained the presidency with the support of almost half the American public. The morals are that bad ideas are like an infectious disease, and our best safeguard is to boost our mental immune systems.

Certainly every thinking person alive in this century has a mystery to explain: how, in an era blessed with unprecedented resources for reasoning, the public sphere is infested with so much fake news, conspiracy theorizing, and "post-truth" rhetoric.

There are, to be sure, theories on why irrationality flourishes. According to a growing conventional wisdom in social sciences and the media, the human being is portrayed as a caveman out of time, poised to react to a lion in the grass with a suite of biases, blind spots, fallacies, illusions, and fundamental errors. (The Wikipedia entry for cognitive biases lists almost two hundred.) Though I am a prominent advocate of evolutionary psychology, I don't sign on to this cynical picture of our species. Hunter-gatherers—our ancestors and contemporaries—are not nervous antelopes but cerebral problem solvers. And a list of the ways in which we are stupid cannot explain why we're so smart: how we discovered the laws of nature, transformed the planet, lengthened and enriched our lives, and articulated the rules of rationality that people so often flout.

While I agree that the environment that shaped our minds did not select for modern instruments of rationality like statistical formulas and datasets, I think it's better to think of that environment as the backdrop to most of human life, right up to the present. The benchmarks of rationality come from academic philosophy, science, and mathematics. These were never a part of people's lived experience, and for most people, still are not. When people deal with problems that are closer to their personal reality, they are not as benighted as the media would suggest. In getting to work and raising their kids, most people execute feats of rationality that outthink our best artificial intelligence software.

So how could otherwise rational people believe that Hillary Clinton ran a child sex ring out of a pizzeria, or that jet contrails are made of mind-altering drugs dispersed by a secret government program? The standard answers from philosophy, probability

theory, and cognitive psychology—blunders in critical thinking like affirming the consequent, misunderstandings of chance like the Gambler's Fallacy, cognitive biases like Base-Rate Neglect—provided little insight.

In his other writings, Norman has convincingly refuted the idea that human reasoning evolved to serve some non-rational function like besting our social rivals in arguments. We really are equipped, he says, with rational faculties that, when healthy, align our collective beliefs with reality.

What, then, makes the rational animal so irrational? Here, Norman explores the vulnerability of all complex systems to infection by agents with their own ultimate goals. Some of them are small organisms that infiltrate our tissues and cells. But some of them are small ideas that infiltrate our brains.

As this book goes to press, the news is dominated by two events that, by the lights of this book, align into a poetic coincidence. Within days of each other, the first safe and effective vaccine against Covid 19 was announced, and the winner of the 2020 American election became apparent. No one should savor this week more than Norman, because his book sent to press that week argues that it's the equivalent of a vaccine we must deploy if we are to keep future infections of bad ideas at bay.

—Steven Pinker
Johnstone Family Professor of Psychology
Harvard University
Author of *How the Mind Works* and *Enlightenment Now*

Introduction
Tree of Life, Seeds of Death

Those who can make you believe absurdities can make you commit atrocities. —*Voltaire*

I pulled open the glass outer door of the Tree of Life synagogue and went in to retrieve my son. It was a crisp fall day in Pittsburgh, and Kai—then about four—attended day care in the now-infamous house of worship. Kai hugged his friends goodbye, took my hand, and we walked outside. By the curb sat the family car, my wife at the wheel. Kai liked the challenge of climbing up and into his car seat, so I waited as he made his ascent. He completed the maneuver and smiled up proudly. I buckled him in. "How was school, buddy?" I asked. "Good," he replied. "We met God."

Heidi shot me an astonished look. I returned it, and slid into the passenger seat. "Holy cow!" I said. "Can we hear the story?" Kai was matter-of-fact: God came in, talked to his teacher, and gave him a high five. Then he left. Really, Dad, it was no big deal. Later, we made inquiries, and his teacher told a different story. Apparently, the synagogue's bewhiskered rabbi had dropped in to say hello. His teacher introduced him as a "man of God," and Kai, who knew God to be bearded, had connected the dots.

Years later, a deranged ideologue named Robert Bowers parked his car where Heidi had parked ours. He got out, reached into his trunk, and pulled out a semiautomatic rifle. Then he threw open the synagogue's glass outer door, entered the sanctuary, and began shooting. People he'd never met began dying. Panicked congregants barricaded doors; others phoned for help. Sirens wailed and law enforcement scrambled to the scene. Screaming "All Jews must die!" Bowers turned his guns on the arriving officers. He wounded two and retreated into the very annex where my kids attended "school."

Within the hour, a SWAT team arrived. A firefight ensued, and Bowers took a bullet. Trapped and bleeding, he finally surrendered. Police took him into custody and medics rushed in to tend victims. Sadly, eleven of my neighbors were beyond helping. It was the deadliest attack on Jews in America's history.

Bowers was taken to a nearby hospital. There, he received care from incomparably better human beings, many of them Jews.

I count myself lucky to have grown up in Squirrel Hill, the neighborhood where all this took place. Some say Squirrel Hill was the inspiration for *Mister Rogers' Neighborhood*, the nurturing fictional world created for public television. (The show's

gentle host—the late Fred Rogers—lived close by.) Now, our neighborhood—Mr. Rogers' neighborhood—is the site of a horrific hate crime.

When Bowers began shooting, my family was out of harm's way. Kai's teacher and rabbinical "God" were also safe: they'd left the congregation years before. God himself? I have no idea where he was. I was mere blocks away, developing a vaccine for extremism.

A Plague of Ideologies

We learn about tragedies like these, come together in grief, and resolve "Never again." Then, seeking remedies, we ask questions. How can people do such unspeakable things? We try to fathom the thinking behind such acts, find ourselves baffled, and label it "unthinkable."

Words like *unthinkable* serve to express our horror, but they also smack of denial. For evidently, people *do* think such things. Some go so far as to plan them. Apparently, a sufficiently disordered mind can speak the unspeakable and find sense in the senseless. There's a dreadful phenomenon at work here, and so far, it has defied our best efforts at comprehension. Examine it carefully, and you'll find something genuinely anomalous—something we can't explain with existing frameworks.

Yet explain it we must. For similar forms of derangement are cropping up everywhere. Extremist worldviews, conspiracy thinking, and hyper-partisan politics spread like cancers online. Mass shootings, terror bombings, and hate crimes occur almost daily. In recent years, we've seen culture wars erupt, zealous fundamentalisms make a comeback, and toxic nationalisms gain strength. In 2017, American *Nazis* marched openly through the streets of Charlottesville, Virginia chanting "Blood and soil!" and "Jews will not replace us." Why is this happening? Why again, and why now? Evidently, something quite fundamental is amiss. But what? And how in the world do we fix it?

I want to develop a novel understanding of these phenomena—and with it, an overlooked approach to addressing the problem. The approach centers on an unsettling idea: bad ideas are mind parasites—pathogens that quite literally "infect" minds. Happily, minds have immune systems: operations that keep bad ideas at bay. Sadly, these systems don't always perform well. Sometimes, bad ideas overrun them and thoroughly disorder minds. In fact, a mind's defenses can collapse under certain kinds of stress.

Especially the kind of stresses *ideologies* subject them to.

This is a book about the mind's immune system—its marvelous capacity to protect us from many of the bad ideas out there, and its glaring failure to protect us from divisive ideologies. It's about how mental immune systems work, why they often fail, and how we can strengthen them against failure. It's also about *cultural* immune systems—the things cultures do to prevent bad ideas from spreading—and why these systems are also prone to collapse. That epidemic of unreason we're witnessing today? It's rooted in a cultural immune disorder.

Interpreting our situation in immunological terms sheds an uncanny light on our "post-truth" predicament. It highlights root causes and suggests novel remedies. It opens the door to a more systematic approach to controlling the spread of bad ideas: one based on the realization that mental immune performance can be enhanced. I

think this approach will help us achieve something a century's worth of critical thinking instruction has thus far failed to accomplish: "herd immunity" to ideological contagion. By patiently inoculating willing minds, we can prevent deadly outbreaks of unreason.

Untold Story

Scientists have done a lot in recent years to expose a root cause of our dysfunctional politics. The psychologist Jonathan Haidt summarizes the research in his best-selling book *The Righteous Mind*.[1] His conclusion? Our brains have a kind of tribal architecture. As he puts it, we're "groupish" creatures: beneath the level of conscious awareness, our thinking is bent by the need for tribal solidarity. Passionate loyalty to an in-group "us" makes it hard to think in a fair-minded way. When an out-group "them" is made to seem threatening, our thinking becomes especially bent. Demagogues and propagandists exploit these vulnerabilities: they stoke judgment-warping fears and manipulate their own loyalists.

Robert Bowers was a textbook case. A staunch conservative, he became a follower of aggressive right-wing media. He consumed online propaganda, embraced a militant Christian identity, and viewed the mainstream media as a big conspiracy. He came to trust the delusional claims of white supremacists. Then, in October 2018, several hundred Hispanic refugees began a long march for the US border, hoping to gain asylum. America's president saw a political opportunity and cast them as an invading mob. Online, conspiracy theorists alleged that American Jews were orchestrating an "invasion." Apparently, Bowers was unequipped—or disinclined—to question this narrative. Within days, he snapped. On a website for extremists, he posted a message that speaks to the depths of his derangement: "I can't sit by and watch my people get slaughtered . . . I'm going in." He then loaded his weapons and headed for Mr. Rogers' neighborhood.

Bowers failed to question ideas central to his identity. He became deranged, and others paid the price. He is not alone in this: billions of us make similar—if less lethal—mistakes: we fail to ask basic questions, embrace self-serving beliefs, and saddle others with the costs. As I will show, the garden-variety irresponsible thinking of otherwise decent people paves the way for extremism. This is a huge problem for humanity—and always has been. But now, with Internet connectivity, it has become an existential threat. Climate denial alone could do us in, and that's just the tip of the iceberg. Only the iceberg of irresponsible thinking isn't melting: it's growing.

I study psychology because I want to understand how thinking goes haywire. For a time, I thought that references to the brain's tribal architecture sufficed as an explanation. I came to realize, though, that they can't be the whole story. We all have brains with the same basic architecture; why then do some *but not others* shoot up synagogues? Why is humanity sometimes more tribal, and sometimes less? Why do people exhibit different levels of susceptibility to divisive ideologies? Evidently, biological constants interact with cultural variables in ways that make a difference. And here's the thing: the variables are the very thing prevention efforts must vary. They're our levers: the things we must adjust to solve the problem. We need to understand them. So what's the rest of the story?

We know that Bowers' moral sensibilities had been scrambled. We also know that

ideologies had a hand in the scrambling. In this book, I'm going to use the term *ideology* to mean a system of ideas that doesn't serve its human hosts well—a system of ideas that is infectious, dysfunctional, harmful, manipulative, or stubbornly resistant to rational revision. (Later, I'll elaborate on this definition; for now, it's enough to see that Bowers appears to have contracted several.)

Ideologies in this sense have enormous power to disorder minds. Like demagogues, they exploit mental vulnerabilities. For thousands of years, ideologies have spread like diseases, warping worldviews, inciting violence, and wreaking havoc on human prospects. They've destabilized magnificent civilizations. They've sustained oppressive orthodoxies. They've divided peaceful societies, provoked devastating wars, and unleashed genocidal furies. History is a living, breathing testament to this truth: outbreaks of ideological thinking end in tragedy. Yet we still lack the kind of understanding that would allow us to prevent such outbreaks. This must change.

As we'll see, an ideology can hijack a mind without any help from a propagandist. In fact, demagogues rise to power in populations where ideological rigidity has *already* taken root. This is true, for example, of the America that elected Donald Trump: as pundits are fond of saying, his electoral victory was merely a symptom. To understand the disease, we must grasp how ideologies circumvent common sense, take up residence as belief, and alter the way people think.

Mental Malware

Ideas can induce minds to help them—the ideas—proliferate. For example, successful memes impel millions to repost them online. Salacious rumors get gossips to share them. Evangelical convictions inspire the faithful to proselytize. Propaganda induces its victims to propagate it. Conspiracy theories captivate minds and get them to infect other minds. The basic point is simple and uncontroversial: ideas can spread despite being false, delusional, or destructive.

Nor do ideas always serve the best interests of the minds that host them. In fact, they can be actively harmful. Take the idea that Allah wants you to don an explosive vest and kill infidels. An idea like that can destroy the mind that harbors it. You'd think host immolation would be a losing strategy for an idea, yet this one manages to spread even so. How? When a successful suicide bomber inspires copycats, one copy of the idea is obliterated, but other copies take its place in the larger meme pool. Individual hosts prove expendable. Think about it: in cases like this, bad ideas *use people* to proliferate. And garden-variety bad ideas are relevantly similar: host the idea that smoking cigarettes is cool and you're likely to pay a price—even as you're infecting others with the idea.

We like to think of ideas as things that answer our beck and call: that we have agency and they don't. But this is a simplistic conceit, as the phenomenon of viral "memes" makes clear. The fact is, bundles of information frequently take on a life of their own. And the language of agency is useful for understanding the complex and sometimes lifelike behavior they exhibit. Viruses don't think, but they manipulate host cells. In fact, experts attest that they trick cells into serving their—the virus's —"interest" in spreading. In the same way, an idea can trick a mind into serving its "interests."[2]

Bad ideas have all the properties of parasites. Minds *host* them, the way bodies host

bacteria. When bad ideas spread, they *replicate*—copies are created in other minds. An idea can even induce its host to *infect* other minds, just as the flu virus can induce an infection-spreading sneeze. Finally, bad ideas are harmful almost by definition.

I'll spell out what I mean by "bad idea" soon enough; for now, just note three things. First, an idea can benefit its host—by comforting or inspiring, say—but still be bad in the sense of false. Second, an idea can be *short-term beneficial* but *long-term harmful*: by delivering a satisfying jolt of righteous indignation, say, but causing us to say things we regret. Third, an idea can *benefit its host* while *harming others*—say, by inducing him or her to swindle. Such ideas can rightly be called bad even when they're beneficial in some limited sense.

Many today have an almost allergic reaction to frank talk about bad ideas. We think: "Who am *I* to say that so-and-so's idea is bad?" Then we abstain from judgment and congratulate ourselves for our tolerance. This is a culturally conditioned reflex, and it's not serving us well. Here's the truth: it's up to *us* to filter out bad ideas. As we'll see, avoiding such work is an indefensible form of responsibility avoidance. We need to call out problematic ideas, just as we call out problematic behaviors.

Bad ideas *are* parasites. Not "analogous to parasites" or "metaphorical parasites" but *actual* parasites. Philosophers have shown that the concept of mind-parasites has theoretical integrity, and scientists are waking to the implications.[3] Public health officials are describing the spread of misinformation about the coronavirus as an "infodemic."[4] Scholars are publishing peer-reviewed articles about how to "inoculate" minds against misinformation.[5] Think tanks are exploring the idea of "cognitive immunity."[6] Science never turns on a dime, but on this question, it's begun to change direction.

We nonscientists need to wake up too. We pretend that, to a first approximation, mental contents are inert—that *what* we think doesn't affect *how* we think. We ignore the fact that ideas can seduce, addict, confuse, disorient, and derange. We suppress the knowledge that beliefs can compromise our ability to think in clear and impartial ways. (Beliefs of an identity-defining sort turn out to be especially problematic.) We half acknowledge that irresponsible believing causes enormous harm, but continue to treat belief formation (and identity formation) as utterly discretionary—a purely private affair. This neglects what is rapidly becoming undeniable: our minds are networked, susceptible, and easily unhinged. And mind-parasites are real.

Pathogens spread through populations, compromising the health of plants and animals. Malicious software spreads across the Internet, interfering with the proper functioning of computers. And bad ideas spread through social networks, interfering with the proper functioning of minds. These—all three of them—are facts. But we've come to grips with only two of the three.

Compare humanity's response to these three facts, and the need for a scientific revolution becomes clear. Case one: biologists have learned that viruses hijack cellular machinery to replicate. They study how viruses accomplish this, then medical professionals translate the resulting understanding into clinical interventions: everything from vaccines to virotherapy. If you haven't suffered recently from measles or mumps, chicken pox or smallpox, you can thank the specialists who safeguard this dimension of public health. Biology and medicine have answered the call.

Case two: network security specialists study malware—computer viruses, digital worms, Trojan horses, and the like. These "white hat" hackers puzzle out how digital parasites work, then use the resulting knowledge to develop countermeasures. From antivirus software to sound security protocols, we rely on the work of such specialists

to keep our computer networks healthy. ("Healthy," of course, here means "functioning well.") If your computer behaved well today, you can thank network security professionals; they too have answered the call.

So why is there no science of *mental* immunity? Why aren't we putting mental immune systems under the microscope, and learning about *their* vulnerabilities? Why aren't we doing more to mitigate the mischief that mental malware makes?

The answer has nothing to do with the relative value of the affected systems. Medicine is a trillion-dollar industry because bodily health matters. Much the same is true of cybersecurity: we spend billions on it because we need our computers to function well. But the well functioning of our minds is every bit as important. Our computers are significant to us, but in the end, they're mere means—things we use and ultimately discard. (Some speak in similar ways about our bodies—as if they were mere vehicles for our minds.) By contrast, our minds are ends in themselves. They matter quite directly. Surely our concern for the quality of mental experience is the only reason we attach significance to anything. Mattering is *rooted* in minds.

So why don't we protect our minds with a science of mental immunity? Perhaps the concept of mental malware touches a nerve. Perhaps our pride is blinding us to the truth: ideas are constantly rewiring our brains—and for better or worse, remaking our minds.

Cognitive Immunology

The expression "bad idea" doesn't have to mean "idea I happen to dislike." If used carefully, it can point to salient features of reality: the idea's actual logical and causal properties, say, or its tendency to subvert human interests. These are properties that diligent, objective inquiry can expose. As for the expression "mental immune system," it may not pick out a discrete chunk of matter, but that in no way implies that these systems aren't real. Mental immune systems *do* exist, but we must learn to see them for what they are. This book will show you how.

I envision a discipline that seeks to understand and enhance mental immune function—the things minds do to shed bad ideas. I call it "cognitive immunology." Cognitive immunologists will examine the properties of ideas—both logical and causal—and identify ideological pathogens; they'll comprehend how bad ideas infiltrate minds and devise strategies to prevent their spread. They'll puzzle out how healthy minds use reasons to remove bad ideas, and grasp why unhealthy minds cease reasoning in this way. And its applications will help rid us of false, unjustified, senseless, and dysfunctional beliefs—among them those that "suppress" our mental and cultural "immune response" to other bad ideas!

The science I envision will be both pure and applied: it will diagnose *and* it will treat. It will be based on evidence and informed by theory, but also guided, like its namesake, by a hard-to-define notion of health. Note that, so described, cognitive immunology is not free of value commitments: it unapologetically values function over dysfunction. This makes it analogous to medicine. Cognitive immunology can be every bit as scientific as the immunology that serves biological health.

There's a science here, waiting to be born. In fact, it's stirring. Cognitive scientists have concluded that "systems of misbelief may evolve into full-fledged mind-parasites"—that "viruses of the mind [really do] exist."[7] The concept of mind parasites

is clearing up historical mysteries, like the rapid spread of witchcraft beliefs in early modern Europe.[8] Scientists at Princeton and MIT have founded a Network Contagion Research Institute. Self-described "inoculation theorists" are finding ways to combat science denial.[9] For my part, I'll show that mental immune systems are as real as the body's immune system. And that's just the beginning; the cognitive immunology revolution is coming.

Imagine a world where cognitive immunologists design interventions —"immunotherapies"—that restore mental immune health. Where mental immune "boosters" and "mind vaccines" prevent epidemics of partisan thinking. Where people think more clearly, reason more collaboratively, and change their minds when reasons show them to be in the wrong. Imagine reason-giving dialogue flourishing and breaking down ideological barriers. Imagine "fixed" mindsets unfurling, like flowers freed from frost.

Can we build such a world? The prevailing pessimism answers no. Read on, though, and you're apt to reach a different conclusion. Wisdom enthusiasts have time and again built comparatively enlightened worlds; and now, we have the tools to build another. In fact, we can put an end to the ideological corruption of minds. A new Enlightenment awaits—provided each of us does our part.

Pre-Expedition Briefing

This book contains ideas, stories, and arguments selected for their immune-boosting power. You'll meet an idea that has liberated billions from ideological shackles. You'll try on an attitude that protects minds from premature closure. You'll learn how reasons work, and how you can reason more capably. Finally, I'll explain how you can update your brain's operating system for life in the Internet age.

The rest of this introduction amounts to a pre-expedition briefing. Think of it as a map of some challenging conceptual terrain. Or a compass you can use to get your bearings. After consulting it, you might want to customize your journey. If you like, skip to the chapters that most directly address your concerns. I ask only that you bring three things: grit, an explorer's mentality, and a little team spirit.

The book has four parts. Each will answer basic questions about mind parasites and mental immune systems: what they are, how they work, and how to deal with them. Earlier parts are designed to impart the habits of mind needed to master later parts. They're meant to scaffold what some call "higher order" thinking. Together, they chart a path to robust mental immune health.

Part I will introduce the basic concepts of cognitive immunology and equip you to use them. This should heighten your sensitivity to bad ideas. The world's most capable thinkers notice things that others miss; the immunology frame can help you *feel* the importance of these things—and thereby think more capably. The result is a kind of first aid kit for a culture in immune distress.

The rest of the book will delve into cognitive immunology's philosophical foundations. It will challenge you to think deeply about core concepts. Sadly, the concepts that regulate the contents of our minds—concepts like *good idea*, *bad idea*, *faith*, *science*, and *reasonable*—aren't doing the job. They leave us vulnerable to morally disorienting ideas and fail to induce the kind of wisdom our world needs. It's high time for an upgrade; to replace them, though, we need to wrestle with some tough

questions.

Part II will explore the question "What makes good ideas good, and bad ideas bad?" We'll examine two answers, each leading to an influential "ethics" of belief. One focuses on an idea's "downstream" benefits and ends up endorsing certain kinds of faith. This view prevails in the world of religion. The other emphasizes "upstream" evidence. It prevails in the world of science and proves disruptive to faith-based attitudes. We'll learn from both proposals, as each contains a piece of a larger truth. Grasp this compound truth, and you'll see that both religious and secular worldviews bring something to the table. And your ability to spot mind parasites will grow.

In Part II, we'll also look at how cultures and subcultures regulate belief. The subculture of science, it turns out, does a particularly good job of it. We can learn a lot, then, by reverse-engineering science. Doing this reveals a pivotal fact: the common idea that each of us has a right to our opinion is busy compromising mental immune systems. I then develop treatments modeled on immunotherapy and show how we can use them to reduce our susceptibility to bad ideas.

In Part III, I put the mind's immune system under the microscope. This allows us to identify the "antibodies" of the mind. This yields new answers to ancient philosophical questions. Questions like: "What *are* reasons, exactly?" and "How do they work?" Reasons, it turns out, are like levers—we use them to pry loose some ideas and shoehorn others into place. Ideally, we use them to align beliefs with conditions in the world—that is, to seek truth. But we also need them to align our beliefs with other beliefs: to reconcile our attitudes, commitments, and feelings. Importantly, groups use reasons to forge and repair *shared* outlooks.[10] All these kinds of alignment are important, for they impact both individual and collective well-being. But sometimes, they work at cross-purposes. Believe purely in order to belong, for example, and your thinking can become evidence-resistant. Stay on this path, and your worldview can come unhinged.

The big idea of Part III is that reasons function properly only in the presence of a fulcrum-like social norm. This norm tells us that we must *yield* to good reasons—to change our minds and behavior in the face of them. I call this norm "reason's fulcrum" because without it, reasons can't do their jobs. It's the beating heart of all dialogue, all reasoning, all science, all problem-solving, and much learning. It's utterly fundamental to civilized existence. When we don't submit to better reasons but instead cling to, say, identity-defining beliefs, we damage this norm. When we make a habit of this, thinking comes unhinged: unmoored from the objective considerations that might otherwise anchor it. This makes us susceptible to dangerous ideas. When entire cultures abuse this norm, a pivotal social expectation wanes, and eventually, epidemics of unreason run riot. Mere anarchy is loosed. This is the deep story of why our culture is in disarray. The discovery points to a promising way to inoculate minds against ideological contagion.

In Part IV, I show that our conceptions of reasonable belief are like the mind's gatekeepers. In a sense, they're the brain's antivirus "software." By upgrading these conceptions, we can boost mental and cultural immune health. And here we uncover a startling truth: *the prevailing understanding of reason's requirements—the one our culture "preinstalls" in most of us—is busy compromising mental immune function all over the globe.* Put differently, a misleading picture of responsible belief is holding us back: it excuses irresponsible believing and disrupts our reason-giving practices. This prevents us from resolving deep differences of opinion and confounds efforts to forge consensus about the things that matter most. It frustrates our search for wisdom, and alienates us from

deep sources of meaning and purpose. Finally, I develop an immune-boosting alternative: a standard of reasonable belief that inoculates minds against the worst kinds of infection.

I hope the book inspires you to become an advocate of responsible cognition. Not a *preacher* of responsible thinking but a *practitioner* of it. Someone who upholds the norms of accountable talk and, by so doing, makes everyday conversations extraordinary. When I speak of each of us doing our part, that's what I have in mind. In this way, you can be a difference-making contributor to the cognitive immunology revolution.

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