FOREWORD BY HOWARD ZINN

PRESCRIPTION FOR SURVIVAL a doctor's journey to end nuclear madness

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Prescription For Survival: A Doctor's Journey to End Nuclear Madness

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FOREWORD

It is a rare and welcome phenomenon when someone renowned in some sphere of science or art crosses into the arena of social struggle and dares to speak out on matters of peace and justice. One thinks of Albert Einstein, incomparable in his field, becoming a vocal advocate of peace. Or Bertrand Russell, world-famous philosopher, drafting, along with Einstein, a "Manifesto" against war. Or Noam Chomsky, pioneering linguist, turning his intelligence toward the most trenchant criticism of militarism and war.

Dr. Bernard Lown is a distinguished member of that small circle, having first attained international prominence as a cardiologist and then becoming a founder of the International Physicians for the Prevention of Nuclear War. In the pages that follow, he recounts his journey, and an exciting one it is, in which the trajectory of his own life intersects with the most dangerous years of the nuclear age.

When IPPNW was founded in 1981, the "Doomsday Clock" of the *Bulletin of the Atomic Scientists*, which showed how close we were to nuclear war, was set at seven minutes to midnight. In a discouraging editorial, the editors of the *Bulletin* described the Soviet Union and the United States as "nucleoholics," unable to shake an addiction to nuclear weapons. The following year, with Ronald Reagan as president, the Cold War rhetoric intensified and the Doomsday Clock was set at four minutes to midnight.

By 1984, relations between the two superpowers had reached a low point, and the *Bulletin of the Atomic Scientists* told its readers: "Every channel of communications has been constricted or shut down; every form of contact has been attenuated or cut off." The Doomsday Clock was now at three minutes to midnight.

It was in this forbidding atmosphere, against great odds, that Bernard Lown and his colleagues in IPPNW struggled to create citizen-to-citizen contact between American and Soviet doctors as a way of breaking through the wall of hostility between the two nations. Central to this effort to bridge the Cold War divide by human contact was the developing relationship between Dr. Lown and the distinguished Soviet cardiologist Dr. Eugene Chazov. The story of their friendship is an unreported piece of history, in which obstacles of ideology and bureaucracy had to be overcome to create a bond in the interests of a peaceful world.

Dr. Lown and his colleagues in IPPNW, persisting in their efforts to create a Soviet-American dialogue, encountered intense hostility in the press and the public. They were accused of being "pro-Soviet," "anti-American," "unpatriotic"—of consorting with "the enemy."

In defiance of this vitriol, they persisted in speaking above the heads of the political leaders in Washington, to the public at large, pointing out, with the precision of scientists, the horrific consequences of nuclear war and suggesting the absolute necessity for dialogue instead of conflict. IPPNW was acting out the spirit of democracy, in which not governments but people are sovereign.

The participation of doctors was natural. They were healers. They were guardians of life. Physicians from all over the world joined IPPNW, soon numbering 135,000 doctors in forty countries.

The public was growing more and more aware of the threat of nuclear war. The movement for a nuclear freeze grew as city councils and state legislatures responded to public opinion, and even the US House of Representatives voted in favor of a freeze on nuclear weapons. The culmination of the movement was an enormous gathering of almost a million people in the summer of 1982 in New York City.

The efforts of IPPNW were given dramatic recognition in 1985 by the awarding of the Nobel Peace Prize, with Bernard Lown and Eugene Chazov invited to Oslo to receive the prize. In his acceptance speech, Dr. Lown recognized the obstacles to peace but urged his listeners to "hold fast to dreams."

He conveys in this book the excitement of the occasion, including the famous incident when a member of the audience had a heart attack and the two cardiologists, Lown and Chazov, worked together to resuscitate the man. There were repercussions to the awarding of the prize to IPPNW. The *Wall Street Journal* said that the Nobel Committee had hit "a new low." (The *Journal* had not reacted similarly when Henry Kissinger, one of the promoters of the war in Vietnam, was awarded the Nobel Peace Prize.) Dr. Lown gives us a fascinating account of the details surrounding the award.

By this time, Mikhail Gorbachev was head of the Soviet Union, and there were new possibilities on the horizon. Dr. Lown recounts a fascinating conversation with Gorbachev where, with characteristic boldness, he raised the question of the exile of the Soviet dissident Andrei Sakharov and also pressed Gorbachev to extend the Soviet moratorium on nuclear testing. On both counts, there was success.

While the book concentrates on the critical Cold War years of the 1980s, Dr. Lown concludes with a penetrating analysis of the foreign policy of the United States today. He points to the parallels with the Cold War—"terrorism" replacing "Communism" as fear grows into hysteria, resulting in irrational violence.

This is not just a remarkable history—personal and political—but also a call to action. It is a plea to readers to speak up, to act. It tells us that history takes a turn for the better only when citizens, refusing to wait for governments, decide they must themselves join the long march toward a peaceful world.

HOWARD ZINN Author of *A People's History of the United States*

PROLOGUE

Back to the Future

Turning and turning in the widening gyre The falcon cannot hear the falconer; Things fall apart; the centre cannot hold; Mere anarchy is loosed upon the world, The blood-dimmed tide is loosed, and everywhere the ceremony of innocence is drowned; The best lack all conviction, while the worst Are full of passionate intensity. —WILLIAM BUTLER YEATS

HOW CLOSE WE CAME TO EXTINCTION!—and it is forgotten now. In Hiroshima and Nagasaki more than a hundred thousand human beings were killed in a split second, yet the devastation led not to a halt but to a nuclear arms race. Within a few decades, two superpowers, the United States and the Soviet Union, had amassed a nuclear arsenal equivalent to four tons of dynamite for every man, woman, and child on earth. The weapons were held in high readiness for instant launch. Each superpower was belligerent, self-righteous; each claimed the high moral ground. At the same time, caricatures of the enemy, viewed from Washington and Moscow, were evil mirror images, unpredictable and full of malign intent.

This book exposes the hidden machinery of history. Monumental events, barely visible to the public eye at the time, shifted the trajectory away from nuclear war. Major actors in the unfolding drama were not statesmen but outsiders, medical doctors who were more comfortable wielding a stethoscope at a patient's bedside than jousting on the political stage against mushroom clouds.

This is the story of an organization with a mouthful of a name, the International Physicians for the Prevention of Nuclear War (IPPNW). In a crisis, this organization moved with speed and precision to avert catastrophe. Within five years of its founding, IPPNW received worldwide recognition: a Nobel Peace Prize. In those five years, IPPNW recruited 135,000 doctors in more than forty national affiliates to penetrate the fog of denial about the consequences of nuclear war. The doctors made millions of people aware of a frightening reality: medicine had nothing to offer in case of such a war; there was no place to hide from the deadly reach of radioactive fallout. The involvement of multitudes in the antinuclear movement compelled governments to begin serious negotiations.

The doctors bucked expert opinion to launch a dialogue with Communist colleagues in the USSR. To some within the government and media, this was an act of traitorous collaboration with those who threatened the very survival of the United States. Yet peace is not sustained by talking only with friends. One must communicate with an enemy.

At the heart of these cascading events is a human narrative: my chance encounter with a Soviet physician, Eugene Chazov. He was the leading cardiologist in the Soviet Union, the physician to those in power in the Kremlin.

Without the friendship we formed, IPPNW would have been inconceivable. Chazov's participation stamped the doctors' movement with the imprimatur of East-West cooperation. The alliance we formed catapulted me, an American political outsider, into a new position. Suddenly I was like a character in a Le Carré spy tract, one person removed from the chairman of the Communist Party of the USSR, the very individual stoking the fire on the Communist side of the Cold War.

I wish this book were a scholarly chronicle of times past, but in fact, the relevance of the story I must tell is likely to grow. With the end of the Cold War, the nuclear genie was not rebottled but merely hidden from view. The United States, arguably the most powerful military nation in the bloody war-ridden history of humankind, has held on to its brimming nuclear arsenal. The lesson is clear: if the secure need such weapons, the weak can't do without them. Thus is global proliferation spawned.

The climate grows worse. Rogue failed states crave to go nuclear; stateless terrorists are ready to enter the fray. With the atomic secret out in the open, with radioactive nuclides ubiquitous and inadequately guarded, constructing a genocidal nuclear device is no longer a dream for lunatics. Today's suicide bombers will strap themselves with nuclear devices tomorrow.

This book is a reminder of a saving grace of the perilous nuclear confrontation, relevant to the present geopolitical quagmire. Even during the darkest days of the Cold War, when the Soviet Union was known as an "evil empire," the United States reasoned, debated, negotiated, reached accords, and tried to understand what made the USSR tick.

The present American government has forgotten this vital lesson. Official policy, according to the mantra of our day, is "We don't negotiate with terrorists." This caveat is repeated with fervor, as though it proclaimed the essence of American moral probity. But smiting moths with sledgehammers begets collateral damage that in turn begets vengeful recruits for the terrorist. In a war without an end in sight, American society is bound to lose. Democratic institutions are fragile against the demands of unending war.

Events that took place behind the scenes a quarter of a century ago need to be understood. The critical questions from that period have not vanished, and figure heavily in today's events.

Why did we have a Cold War? Who profited from its continuation? Why the demonizing of an entire nation? Why the Faustian bargain with military technology? Why the irrational accumulation of genocidal weapons capable of destroying the world many times over? Why the failure to eliminate nuclear overkill? The enemy that our nuclear weapons were intended to deter has left the stage of history. So why is the United States modernizing its nuclear weapons and thereby promoting global proliferation?

This book probes the past to find answers. Historical amnesia is a prelude to repeated victimization. Had we in the late 1950s and early 1960s been familiar with the history of Vietnam, we would have avoided a tragic odyssey. Had we examined the consequences of the Vietnam War, we would have avoided the colossal disaster of Iraq. We continue to ignore history at our peril. The history of IPPNW and the doctors' successful antinuclear struggles can serve as an immunization against the nuclear virus that threatens our national well-being.

Perhaps the most important lesson in the doctors' antinuclear campaign is a sense of hard-headed optimism. Against impossible odds, a small cadre of passionately committed physicians roused multitudes. Well-focused activities stirred hope and empowered further engagement. Newly mobilized advocates insisted that decision makers address the nuclear threat.

Do human beings have a future on planet Earth? The story conveyed in these pages provides a ringing affirmation.

There are more lessons in the story I am about to relate. The moment we abandon the moral high ground, we are no longer a superpower but a dangerous bully. The road from Hiroshima led to the killing fields of Vietnam and Iraq. This road foreshadows other catastrophes and the unavoidable cost of self-victimization. We have already undermined our envied position as a city upon a hill and have begun to unravel the finely spun fabric of our democratic institutions.

Securing a future free of genocidal weapons requires above all eliminating the economic and political inequities that sunder rich and poor countries. As the Berlin wall divided East and West, so inequality now creates a fracturing divide that augurs global chaos, terrorism, and war. We humans are in more need than ever of a prescription for survival. This memoir shows that change is possible and within reach.

1 The Final Epidemic

Into the eternal darkness, into fire, into ice. —DANTE, *The Inferno*

The decisions that influence the course of history arise out of the individual experiences of thousands of millions of individuals. —HOWARD ZINN

ON REFLECTION, MY ENTIRE LIFE had prepared me for a moment of extraordinary challenge. I was already middle-aged when I began an emotional and intellectual journey through rugged and uncharted terrain. I risked credibility and even retribution when I joined forces with a perceived enemy to contain the unparalleled terror of nuclear war. The enemy became a friend, and together we launched a global movement.

This is both my story and the story of an organization founded to engage millions of people worldwide in a struggle for human survival. To a large extent my own identity and that of the organization became one. Building the organization became a preoccupation, even an obsession. Although I continued my professional work with fervor, as clinician, cardiologist, teacher, and researcher, the International Physicians for the Prevention of Nuclear War (IPPNW) absorbed even more of my energy.

I was born in Lithuania. As a child I had gained awareness of the evil that can pervade human experience. Lithuanian antisemitism preceded Hitlerism, and Nazi storm troopers followed. In the mid-1930s, when I was a teenager, my family migrated to the United States. The shock of acculturation inflicted pain and at the same time honed sensitivities. Secular parents instilled a conviction that the purpose of being was not self-enrichment but making life better for those who follow. Jewishness imparted deep moral moorings.

When I chose medicine as my career, I became deeply involved with the raw human condition. For me, medicine went well beyond the bedside. I

believed then, and still do, that when doctors take the solemn oath to preserve health and protect life, they assume responsibility for the well-being of the human family.

My early life history was a basic training of sorts that prepared me for a plunge into deeper waters. Often, change comes in slow steps. In my case there was a moment of truth after which life was radically different forever. This occurred unexpectedly.

The year was 1961. I was an assistant professor at the Harvard School of Public Health preoccupied with research on the baffling problem of sudden cardiac death. My work was supported by Dr. Fredrick Stare, the maverick chair of the Department of Nutrition. He provided me with ample laboratory space, adequate funds, and freedom to roam in my medical investigations. At the same time, I was teaching medical students and house staff at the Peter Bent Brigham Hospital and working with the fabled clinician and pioneer cardiologist Dr. Samuel A. Levine. To support my family I also had a small private practice where I primarily saw patients for Dr. Levine. My marriage was happy, and our three active young children made life full. I was ambitious and optimistic.

I was approached by Dr. Roy Menninger, a postdoctoral trainee in psychiatry readying to return to Topeka, Kansas, where his family had founded the Menninger Clinic. Roy was a Quaker. He asked me to accompany him to a lecture by the British peace activist and parliamentarian Philip Noel-Baker, who was speaking in a private home in Cambridge. Two years earlier Baker had been awarded the Nobel Peace Prize. His topic in Cambridge was the nuclear arms race as a threat to human survival.

The subject of nuclear war held little interest for me, though I had read John Hersey's book *Hiroshima* more than a decade earlier. The horror that Hersey described stayed only in the back of my mind. My career was on a fast upward trajectory. I had recently invented a new method, the directcurrent defibrillator, to restore a heartbeat in the arrested heart, and I had developed a novel instrument, the Cardioverter, to treat various rhythmic disturbances of the heartbeat.¹ These methods helped revolutionize modern cardiology. Invitations to lecture poured in. Experimental findings and clinical observations had to be written up for publication. Medical work claimed my every spare moment. It seemed wasteful to spend a precious evening on a subject remote from my expertise or interest. Roy, who had been party to my humanitarian pretensions in several discussions, was insistent. Because he was unrelenting, I agreed to attend and invited the one cardiology fellow working in my laboratory, Dr. Sidney Alexander.

I remember little of the content of that evening's lecture except for the essential message: If the stockpiling of weapons of mass destruction continues, they will ultimately be used, and they will extinguish life on planet Earth. Those words were intoned as though by an ancient Hebraic prophet, a jeremiad about the end of civilized life.

I was shaken by an ironic paradox. I was spending every waking moment to contain the problem of sudden cardiac death, a condition that claimed an American life every ninety seconds and far greater numbers throughout the world. It dawned on me that the greatest threat to human survival was not cardiac but nuclear. After the lecture, this troubling thought rarely left me. My emotions ranged from dread to despair and helpless rage.

By profession I am a clinical cardiologist; by temperament I am a surgeon. Introspection and contemplation are not my antidote to simmering anxiety. Intellectual tweedling is not within my character. I had long been a social activist, involved in struggles for universal health care and against racial discrimination. But until the moment I heard Philip Noel-Baker speak, I had shut my mind to the implications of the nuclear age. I had no moral choice but to act. But what was to be done?

I called together a small group of medical colleagues from Harvard's hospitals: Peter Bent Brigham (now Brigham and Women's) Hospital, Massachusetts General, and Beth Israel. At forty, I was the oldest among about a dozen physicians in our group.

We met biweekly at my suburban home in Newton. Initially the meetings had no set plan. We knew next to nothing about atomic weapons and radiation biology, but we never questioned whether it was legitimate for doctors to enter a controversial political arena far removed from their medical knowledge.

Our gatherings had the quality of a book club, except that the book had yet to be written. We were accustomed to journal clubs where current medical publications were critically reviewed. But in the nuclear field much of the pertinent literature was classified. There was of course the experience of Hiroshima and Nagasaki. While the fission bombs dropped on those two cities were a thousand times more devastating than their chemical predecessors, hydrogen fusion bombs represented another thousandfold increase in destructive power. We were confronted with many questions. Never before had man possessed the destructive capability to make the planet uninhabitable. This fact, though widely acknowledged, was not comprehended. Comprehension is generally defined by the boundaries of experience, but the world has not experienced multimegaton detonations.

Were these weapons likely to be used? What factors might predispose a country to wage nuclear war? Hypothetically, what would be the size, nature, and impact of an attack? What would be the medical consequences of (in the parlance of the day) a "nuclear exchange"? Did we have a special responsibility as doctors to speak out, or was the nuclear threat not only outside the domain of our expertise but also outside our social purview as physicians? How could we gather relevant data? What should be the focus of our discourse? What was a proper forum for our antinuclear struggle? Would our conclusions be discredited by those of the military establishment who were truly expert? Would anyone listen, and would our voices make a difference? How were we to address the broadening gulf between an uninformed citizenry and insulated decision makers? The questions were numerous, the answers few.

Doctors are ultimate pragmatists; confronted with a dangerously sick person, they are forced to act even when many pertinent facts are lacking. The essence of being professional is to be ready to reach conclusions and take action with inadequate information. This was the nature of the arena we entered.

Six months after the first meeting in my home, our group had expanded to about twelve consistent attendees. Nearly half were psychiatrists, including Victor Sidel and Jack Geiger, two community health specialists with long records of distinguished political activism on behalf of the poor and disenfranchised. The majority of us were academics, and our forte was to research, to analyze, to write, and to publish.

I do not recall who first proposed the idea that we should prepare a series of medical articles dealing with the health consequences of nuclear explosions on specific civilian populations. We aimed high: these articles were intended for the most prestigious journal in the country, *The New England Journal of Medicine*. Our goal seemed far-fetched, since the *Journal* was published by the then arch-conservative Massachusetts Medical Society. Were these articles indeed published, we anticipated engaging in a broad-ranging discussion to begin the arduous process of public education, a first step in the long path to rid the world of nuclear weapons.

We agreed that we meant to take the incomprehensible and give it scientific credibility and, more important, that we intended to present a realistic scenario that had been missing from public discourse about the nuclear threat. Once we settled on our objective, we surged ahead. More than forty years later, I'm still impressed with the penetrating intelligence of the small group of authors, their prodigious energy, their unstinting investment of time, and their skill in unearthing deeply buried, highly relevant information.

None were better attuned to those tasks than Victor Sidel and Jack Geiger. Vic was an insistent disciplinarian; like a Marine drill sergeant, he kept the small troop hopping and adhering to a taut schedule. A phone call from Vic produced results. It seemed easier to do the work than think up excuses to get him off the phone. Vic had a nose for unearthing facts and possessed the aptitude of an anthropologist in deriving deep insights from fragmentary shards of data. Our writing was burnished to a fine scientific shine by Vic's skill as a researcher.

Jack Geiger, more laid back, was also a workaholic, with the sharp sense of a consummate debater. A former Associated Press sports correspondent, he assimilated massive reams of diverse information and converted it to highly readable text.

I can still recall the scene: invariably late in the evening at the kitchen table, Jack was at the typewriter, a cigarette dangling from his left lower lip, while Vic and I paced the floor. The fast staccato typing continued as Vic and I argued fiercely about some formulation. Jack chain-smoked while playing the role of a court stenographer, taking down our sage observations—or so we believed. In fact the endless pages that poured forth were neither summation nor arbitration of the heated disputes, but innovative and much improved renditions, at times only loosely related to what we were arguing about. Yet each of us deemed it a distillate of his own ideas.

The paucity of precise data did not prevent us from piecing together a coherent and sobering picture. By December 1961, we had completed five articles in which we described the biological, physical, and psychological effects of a targeted nuclear attack on Boston.

We began the series by explaining why physicians needed to address this

problem: "The answers are clear. No single group is as deeply involved in and committed to the survival of mankind. No group is as accustomed in applying practical solutions to life-threatening conditions. Physicians are aware, however, that intelligent therapy depends on accurate diagnosis and a realistic appraisal of the problem."

This first physicians' study was based largely on findings of the Joint Congressional Committee on Atomic Energy, the Holifield Committee,² which had held hearings on the consequences of a thermonuclear attack against the United States. For our study we assumed that Massachusetts would be targeted with ten weapons totaling fifty-six megatons. We focused on the destruction of Greater Boston. To acquire data I exploited everyone around me, including my daughter Anne, then age twelve, who counted the number of hospital beds in the blast, fire, and radiation zones. Her nightmares endured for years.

We concluded that the blast, fire, and radiation would claim unprecedented casualties. From a population of 2,875,000 then residing in the metropolitan Boston area, 1,000,000 would be killed instantly, 1,000,000 would be fatally injured, and an additional 500,000 injured victims were likely to survive.

Ten percent of Boston's 6,500 physicians would remain alive, uninjured, and able to attend the multitudes of victims. In the postattack period, a single physician would be available for approximately 1,700 acutely injured victims. The implication of this ratio was that if a single physician spent only ten minutes on the diagnosis and treatment of an injured patient, and the workday was twenty hours, eight to fourteen days would be required to see every injured person once. It followed that most fatally injured persons would never see a physician, even to assuage their pain before an agonizing death.³

Each ten-minute consultation would have to be performed without X-rays, laboratory instruments, diagnostic aids, medical supplies, drugs, blood, plasma, oxygen, beds, or the most rudimentary medical equipment. Unlike Hiroshima and Nagasaki, Boston could expect no help from the "outside." No functioning medical organization would remain, even to render primitive care.

We concluded that there could be no meaningful medical response to a catastrophe of such magnitude. Physicians who were able and willing to serve would confront injuries and illnesses they had never seen before. Patients would be afflicted with fractures, trauma to internal organs, penetrating wounds of the thorax and abdomen, multiple lacerations, hemorrhage and shock, and second- and third-degree burns. Many, if not all, would have received sublethal or lethal doses of radiation. Many would be emotionally shocked and psychiatrically deranged.

More than one-third of the survivors would perish in epidemics in the twelve months following a nuclear attack due to the combined impacts of malnutrition, crowded shelters, poor sanitation, immunologic deficiency, contaminated water supplies, a proliferation of insect and rodent vectors, inadequate disposal of the dead, a lack of antibiotics, and poor medical care. The rest would be ideal candidates for tuberculosis, overwhelming sepsis, and various fungi, which would constitute the ultimate afflictions for all the survivors.

Physicians would be unequipped psychologically and morally to handle the medical and ethical problems they would confront after a nuclear attack. We could not avoid questions we had theretofore not contemplated:

When faced with thousands of victims, how does the physician select those to be treated first, if any can be treated at all? How is one to choose between saving the lives of the few and easing the pain of many? When pain-relieving narcotics and analgesics are in scarce supply, what is the physician's responsibility to the fatally injured or those with incurable disease? Which of the duties—prolongation of life or relief of pain takes precedence? How is the physician to respond to those who are in great pain and demand euthanasia? What then substitutes for the sacred oaths that have guided medical practice for several millennia? Modern medicine has nothing to offer, not even a token benefit, in the case of thermonuclear war.⁴

We could provide no answers other than to restate an old medical truism: In some situations, prevention is the only effective therapy. We ended by issuing a call:

Physicians charged with the responsibility for the lives of their patients and the health of their communities must explore a new area of preventive medicine, the prevention of thermonuclear war.

Our work on these articles fired our resolve as antinuclear activists. We constituted ourselves as the Physicians for Social Responsibility (PSR). Our first goal was to disseminate our findings to the widest possible medical public.

As a leader of the group, I was assigned the responsibility of persuading *The New England Journal of Medicine* to publish our findings and conclusions. Rather than blindly submit the articles, I planned to interest Dr. Joseph Garland, a distinguished Boston pediatrician. As editor of the *Journal* for the preceding fifteen years, he had played a major role in establishing it as one of the world's leading medical periodicals. He was a crusty New Englander with a wry sense of humor and very few words.

Garland was taken aback by my proposal and rejected outright the possibility of publication, as he deemed the subject radical and political rather than medical. With a laugh, he reflected that were he to publish our articles, he would be fired by the *Journal*'s owners, the Massachusetts Medical Society, "who had conservative views on such matters." He was amused by my assurance that were this to happen, the fledgling PSR would leave no stone unturned to find him an equally responsible job. None of my arguments or pleadings seemed to make an impact, so I left the manuscripts with him, hoping he would at least peruse them.

Our meeting took place on a Friday. The following Monday, I received a call from Garland's office requesting an early get-together. When we met that same day, I found that he had carefully read each of the submitted articles and had entertained a change of mind. He indicated that our carefully drafted manuscripts were compelling. He not only accepted them but told me he would expedite an early publication. To provide balance, he would ask one of the more conservative members of the leadership of the Massachusetts Medical Society to offer a countering opinion.

About three months before the articles were scheduled to appear, this shrewd Yankee prepared the ground by penning a powerful editorial. Dr. Garland called attention to the founding of PSR, approved our mission, and concluded, "The last great conflict may be whether the intelligence of man when turned to social responsibility can prevail over his intelligence when obsessed with the techniques of destruction."⁵

The series of articles we had drafted emerged as a symposium titled "The Medical Consequences of Nuclear War," printed on May 31, 1962. It was accompanied by a short editorial by Dr. Garland titled "Earthquake, Wind and Fire."⁶ He had become a convert to our cause. "It is no longer a matter of a nation's hiding from the blast or fleeing from it, but of preventing it," he wrote. "This is not to be accomplished unilaterally, by abjection, but by convincing all the participants of the folly of the competition, and show-

ing determined leadership in finding a way out." He quoted the abolitionist poet John Greenleaf Whittier:

Breathe through the heats of our desire Thy coolness and Thy balm; Let sense be dumb, let flesh retire, Speak through the earth-quake, wind and fire, O still, small voice of calm.

The impact of the symposium was unprecedented. The two leading Boston newspapers extensively covered the findings on the front page. Attention was not limited to our local press; it was worldwide.

We expected intense and detailed rebuttal from Pentagon experts, if not of our data, certainly of our conclusions. Our findings were disquietingly affirmed by the fact that no criticism was ever forthcoming. We had assumed that the military had studied these issues but had kept the results well hidden from public view lest they caused panic or, far worse from the military's point of view, stimulated a political avalanche against genocidal weapons. We braced for an onslaught that never came. On the contrary, we were flooded with close to six hundred reprint requests from personnel in various branches of the military services. There were also feelers from the Pentagon and from the Disaster Preparedness Agency to see if we would like to become their consultants; since our work would have been classified, we had no interest in that.

The symposium helped our new organization in many ways. It enabled us to get PSR off the ground expeditiously (the organization continues robust to the present day, forty years later). It recruited many to the antinuclear cause. It mobilized public opinion and helped propel opposition to atmospheric nuclear testing. Organizations such as the Committee for a Sane Nuclear Policy (SANE) and Women's Strike for Peace were further empowered.

Jerome Wiesner, President Kennedy's White House science adviser, gave major credit to those two organizations for the Limited Test Ban Treaty of 1963. This treaty banned nuclear weapons tests in the atmosphere, under water, and in outer space. Before passage of the treaty, the White House called me on behalf of President Kennedy to suggest that PSR sponsor newspaper ads in selected midwestern states whose senators opposed it. We followed through. Without the publications in *The New England Journal of* *Medicine*, it is inconceivable that PSR would have been approached by the Kennedy administration.

Perhaps the most consequential outcome was that our findings stilled the shelter frenzy that had gripped the United States in the early 1960s. A massive movement had begun to seek protection from nuclear fallout by burrowing underground. This madness was not discouraged by the government.

A physician acquaintance built a vaultlike structure outside his home and provided it with several months' supply of water, food, medications, and tanks of oxygen. A Geiger counter that protruded like a submarine periscope would provide a clue when radiation fell to a safe level to permit an exit from self-entombment. Many shelters were stocked for weeks of survival, with weapons to mow down the neighbors who didn't have shelters of their own. Our findings dispelled notions of underground safety. We concluded that such a hiding place was probably the worst place to be in case of a nuclear strike. Raging firestorms would suck out all the oxygen and asphyxiate shelter occupants before they were irradiated and incinerated. In fact, there was no place to hide.

We helped stimulate antinuclear movements around the world and seeded the global terrain for the international organization that emerged some two decades later. Our study served as a template for cities around the world. We provided a model to understand what had happened at Hiroshima and Nagasaki by detailing the probable incineration, demolition, and irradiation of familiar neighborhoods and intimate surroundings in Boston. Such exercises raised global awareness of the catastrophic consequences in store for humankind. We expanded our efforts by publishing a book titled *The Fallen Sky*,⁷ which went through several editions. Much to our surprise, we were anointed instant experts and invited as speakers to diverse groups, and we offered testimony before congressional committees on the medical consequences of nuclear warfare.

Ours was a difficult message. The unthinkable is unthinkable for sufficient reason. After all, the outcome of a nuclear attack must elude the imaginings of any sane person. As it has been said about the Holocaust, *he who is lucid must become mad, and he who has not gone mad must have been insane already*.

Albert Einstein famously warned that "the unleashed power of the atom has changed everything save our modes of thinking, and we thus drift toward unparalleled catastrophe. We shall require a substantially new manner of thinking if mankind is to survive."⁸ Although negotiating the quagmire of international politics was a novel role for physicians, perhaps few people are as well suited as physicians to promote a new way of thinking about survival; after all, this is the very heart of our calling. The dialectic of modern times is that the threat of total annihilation and the possibility of undreamt abundance are both progeny of the Age of Enlightenment and the technological and scientific revolution it bore. The health profession is also a child of the Enlightenment.

Perhaps the most important reason for this memoir is to address a common distortion of history. History books often make it appear that only a few dozen outstanding individuals account for whatever has transpired. The leaders sitting around the chessboard moving the pieces from one square to another are the Brezhnevs, Reagans, Gorbachevs, Bushes, Blairs, and Clintons. These are the only characters on the stage of history who make a difference. The rest of us six billion are expendable extras, largely irrelevant. I believe that, on the contrary, we can all act as agents to shape the contour and flow of events. This book chronicles the story of a movement led and joined by many anonymous people who made a crystal-clear, profound difference in the course of human history.

In the turbulent Reagan administration, we helped forge a new agenda and compelled leaders to change direction.

The American historian Howard Zinn wrote,

It may seem a paradox, but it is nonetheless the simple truth, to say that on the contrary, the decisive historical events take place among us, the anonymous masses.... Decisions that influence the course of history arise out of the individual experiences of thousands or millions of individuals.... The result of having our history dominated by presidents and generals and other "important" people is to create a passive citizenry, not knowing its own powers, always waiting for some savior on high—God or the next president—to bring peace and justice.⁹

I am convinced with Zinn that if we are to have a livable world, citizens must rise to a new level of participation. The story presented here shows that this is indeed possible. Doctors proved they were able to penetrate the closely guarded domain of decision makers and that they had something to contribute. I chose to write this memoir because I witnessed the unfolding of extraordinary events. The events were extraordinary both in their own right and as an example of what is possible when a very small group applies itself to a single issue in an unswerving, disciplined fashion. Perhaps the most important message of this memoir is that a small group can—and in our case did—affect the traverse of history.

this material has been excerpted from

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