

The Hot Group

This, I learned, is what happens to you when a single nuclear bomb strikes a city. If you are standing out in the open and close enough, the first thing you see is the last thing you see, a flash of light which blinds you. The heat of the radiation that follows is that of the surface of the sun. Standing close enough, you need not worry about your burned and blinded retinas because your eyes will melt. If the weather was warm before the attack, the skin of your arms and legs may be exposed to the heat as well, great enough to cause grievous burns, or if you are close to ground zero, to have the skin slough off in coils. This will happen too fast for you to notice, because seconds behind the flash and heat will come a blast strong enough to topple concrete buildings, strong enough to flatten them like pancakes, strong enough to sweep the people and things from their floors and into the boiling air. A single megaton bomb will exert a force of more than 180 tons on the wall of a house four miles from the blast, tossing human beings like leaves before a hurricane wind of 160 miles an hour who then will collide fatally with shattering buildings, trees, trucks, and hydrants. With disrupted water lines and impassable streets and with fire fighters counted among the dead and injured, fire will begin everywhere from the epicenter on outwards without being stopped as the thermal radiation strikes cars, gas lines, fuel depots, furnaces, power grids, schools, churches, bedding, sofas, chairs, books, people. There will be no large-scale rescue. Survivors farther away will not escape the bomb, either, since high doses of radiation will kill them painfully in a matter of weeks, while lower doses will cause cancers, leukemias, and birth defects. Beyond the ravaged city, radiation tossed into the air by the mushroom cloud will contaminate the land for miles around. The radioactivity will last for centuries. This is the effect of a single bomb over a single city. In 1980 the combined arsenals of

the U.S. and U.S.S.R. contained 50,000 bombs poised to launch. Was there ever a better definition of madness?

From the perspective of those of us who fought this fight, the movement to abolish nuclear weapons in the nineteen seventies and eighties was one of historical proportions, analogous to the abolition of slavery in the nineteenth century and the enfranchisement of women in the twentieth. It was a battle to save civilization from itself. No issue at the time seemed its equal.

How was I drawn into this Quixotic battle against the seemingly unbreachable walls of the Pentagon, the bomb builders, the Soviets, the CIA, the Congress and the president? What did I know of megatons, throw weights, half-lives, war plans, or even radiation sickness? I was a psychiatrist. That was weakness, and my strength. I knew crazy when I saw it. President Kennedy saw it, saying that “Every inhabitant of this planet must contemplate the day when this planet may no longer be habitable. Every man, woman and child lives under a nuclear sword of Damocles, hanging by the slenderest of threads...”

My doctor friends and I started with a medical concept: that the best treatment for an epidemic is prevention, far more effective than treatment. If the only way to survive a nuclear war was to prevent it, prevention had to be our path. If we were to make war on war, it had to be with a passionate attack on policies and weapons systems. Our method would be to open the eyes of the country to the medical effects of nuclear weapons.

We had our hands full filling in the gaping holes in our own knowledge. I had not heard of Josef Rotblat yet, the only physicist to leave the Manhattan Project on grounds of conscience. I was only dimly aware of 1954 test Castle Bravo, the largest American bomb ever tested which had accidentally contaminated a large area of the Pacific and rendered uninhabitable the atoll

communities of Rongelap and Utirik, or the Tsar Bomba test of the Russians, at 50 megatons, the largest nuclear bomb ever detonated.

Although we had each taken the Hippocratic Oath, I came to believe that each of the physicians I worked with trying to prevent nuclear war came to the problem differently. In 1978 a young emergency room doctor, Ira Helfand, was working on a ballot initiative to declare the city of Cambridge a nuclear free zone, threatening several nuclear weapons laboratories in the Harvard and MIT communities. He had heard that an antinuclear activist had recently come to the Boston Children's Hospital to work on cystic fibrosis. He sought her out for any literature on the medical effects of radiation. Although he came away with none, the pediatrician, Helen Caldicott, had given him something more valuable. "This is a medical issue and we need a group of doctors to do this," she had said. Caldicott was charismatic and outspoken. She had challenged the safety and purpose of uranium mining in her native Australia and fought French atmospheric testing of nuclear weapons in the Pacific.

Richard Feinbloom was also a pediatrician at the Children's Hospital. He was like the bright-eyed Ancient Mariner. He had been an original member of PSR a decade before. For ten years on his own he kept the faith and renewed the legal documents for PSR in the hope it would spring back to life! That meant we already had a tax-exempt organization, a quantum leap over months of having to start an organization from scratch!

Eric Chivian, who had trained with me at the Harvard psychiatric residency at the Massachusetts General Hospital in Boston, heard Helen on the radio. He believed that she could be "one of the great spokespersons on public health." He called her and suggested they form a doctors' organization devoted to protecting the environment. She agreed, but only if it were limited to the nuclear fuel cycle. Eric invited me along to hear her talk at a community hospital.

And then came two more young doctors, Katherine Kahn and Tom Winters. Katherine was a no-nonsense data-driven internist with an interest in the medical effects of radiation and a passion to “to build a better world.” If Katherine was data driven, Tom was just driven. He hailed from Montana, incensed at what nuclear weapons and power were doing to the West. Tom was interested in in halting the building of nuclear power plants and documenting their radiation injuries. Ira recruited Jennifer Leaning, a young emergency room physician who was working on the problem of apartheid in South Africa. Ira convinced her the nuclear issue was even more important.

Richard offered a room in his family medicine practice in Cambridge for our meetings. There was only a handful of us but we were on fire. Our goal seemed simple enough- to build a national organization of doctors who then could educate people about the medical dangers of the nuclear fuel cycle: mining, milling, waste, and weapons.

Helen dominated the meeting with animation, warmth, humor and anger. We chose her as our president. She got as good as she gave. We proposed ideas, argued them to the ground, and started the process again with another problem. Tom wanted us to protest nuclear power plants. Helen was no newcomer to protests, but we did not want to become another protest group. Katherine and Jennifer pushed to set the bar high for us. Helen felt that people would trust us automatically because we were doctors. But we rallied around Jennifer who argued that educating the public for social change was fine, but we had to know what we were talking about. We had to be data driven. My job, I quickly saw, was to keep this group from flying apart. I began to take notes as if listening to a patient, sharpening the good ideas and culling the rest. There would be no scaling the chain link fence at the Seabrook Nuclear Power Plant in white coats.

We did not know where all this passion and energy would take us, but today I realize that we formed a once-in-a-lifetime bond that led to outrageous group creativity that would never be equaled in the rest of our lives. In 1995 two authors writing in the Harvard Business Review dubbed such a coming together a “hot group...a lively high-achieving, dedicated group, usually small, whose members are turned on to an exciting and challenging task. Hot groups, while they last, completely captivate their members, occupying their hearts and minds to the exclusion of almost everything else. They do great things fast...vital, absorbing, full of debate, laughter, and very hard work...Although hot groups are almost never consciously planned, they can turn up in just about any setting: social, organizational, academic, or political. When the conditions are right, hot groups happen, inspired by the dedication of their members to solve an impossible problem or beat an unbeatable foe. When hot groups are allowed to grow unfettered by the usual organizational constraints, their inventiveness and energy can benefit organizations enormously.” Nothing describes the early days of PSR better.

Our group shared a common vision even as we differed on how to achieve it. We were young, ambitious, competitive, comfortable challenging authority, scientifically trained, and respectful of each other. We were unified by the conviction that nuclear power promised isotopic contamination, cancers and leukemias for thousands of years, and that the race for ever more powerful and accurate weapons threatened the existence of humanity.

We began meeting Thursday nights and then on weekends as well. The Hot Group ran the show, a collective fury of passion, self-righteousness, urgency, and shrewdness. How could we build a physicians’ organization? All of us were beginning to speak at grand rounds in our several hospitals. The questions swirled around the room when the Hot Group met. Could nurses join? Medical students? Dentists? Chiropractors? Was PSR the right name? What about broader

issues of global health: malaria, famine, war, ecological collapse? (The hockey stick of global warming had not yet been published). But getting involved in these would certainly dilute our efforts. We would be more effective if we were focused. We agreed: we would address the medical consequences of nuclear power.

I pushed for a populist model. If we educated people well enough, they would make changes in the right direction. But people had to trust us. Doctors speaking out about medicine they had studied in school were more trustworthy than any others on that subject. Our information had to be dripping with credibility. And we needed to look credible. Richard Gardiner, a shaggy radiologist in jeans and sneakers- and destined to become a powerhouse for PSR in the Midwest, stepped forward at a meeting and told Helen he wanted to help. She told him to get a haircut and buy a suit, good advice, but a bit off the mark. Our metaphor for integrity was not a suit, but the white coat.

Eric suggested we publish a petition in the *New England Journal of Medicine*. Eric loved petitions, their pointedness, their immediacy, and the deploying the moral authority of signers with gravitas. Eric had a blue chip education. My wife called his kind “Harvard, Harvard, Harvard,” meaning he was a graduate of the College, the Medical School, and the Harvard Department of Psychiatry. Yet he had a relaxed, informal yet informed and respectful approach with luminaries.

Although I signed it, I thought at the time that a petition was so 1960s. I could not have been more wrong. Eric had managed to secure the involvement of some of the greats of American medicine, not only as signers, but as recruiters of other signers as well. At the day’s end there were over 300 signatures from leaders in American medicine. Called the “Medical Statement on Nuclear Power,” it addressed the problem of nuclear waste and nuclear weapons

proliferation. It was scheduled to run on March 29, 1979 and be delivered to the Journal's 250,000 readers. "As physicians we feel it is our responsibility to alert the public to the unprecedented threat to public health posed by nuclear power," we wrote. Prophetically we cited a report by the Atomic Energy Commission that "a single major nuclear accident might render an area the size of Pennsylvania contaminated and uninhabitable." In the early morning hours of March 29, Unit 2 of the Three Mile Island nuclear power plant in Pennsylvania exploded in a geyser of steam, began to meltdown, and exposed two million people to radioactivity.

Somewhat grandiosely we had scheduled a press conference to talk about our petition in Boston's historic Faneuil Hall on the morning of the 29th. Only one reporter came, Daniel Freudberg from National Public Radio. Everyone else was in Harrisburg. But in Cambridge our telephone began to ring, all day, all week, and for weeks afterwards. People needed reassurance. They wanted information. And most importantly, doctors from around the country wanted to know how they could join PSR to help us. Where there was one hot group, many more wanted to spring up. We had all gone to medical school, but few of us were experts in radiation medicine. We had a long road to travel before we could claim such expertise. We all began a steady and voracious diet of journals, texts, and consultations with specialists. None of us had all the answers. Information from a radiation biologist might need to be supplemented by knowledge of oncology, genetics, pediatrics, and small particle physics. But we were all scientifically trained to dig out data and discriminate the wheat from the chaff. And we were not timid.

But our spokeswoman was in Australia. Tom agreed to represent PSR at a rally at the Pennsylvania power plant. As a medical student in North Dakota, he had spoken at a rally there against anti-ballistic missiles. His enthusiasm over picketing nuclear power construction sites would not help him in later years as an expert in radiation-induced illnesses if opposing counsel

used the photo from his wild youth showing his blond shoulder length hair blowing in the wind as he scaled the fence. But today he was the right man for the job.

The phone machine was flooded with calls from all over the country. My wife, Carol, the mother of a nine-month-old, had tried to volunteer at the Clamshell Alliance, but when she called the Clams were closed. Instead, she became its first volunteer and administrator. Showing up for work with our infant son on her hip, the day was not what she had expected. As Eric and others spoke to NPR at Faneuil Hall in Boston, Carol handling the office alone was caught in the flood of phone requests for speakers and information about radiation, power plants, and nuclear weapons.

She had a long day, and then a long week, effortlessly answering the phones, opening the mail, sending out membership applications, and trying to help doctors as far afield from one another as an ophthalmologist from Mississippi who needed radiation data on beagles, and a Boston Brahmin who volunteered to examine victims of atomic tests.

If we were actually novices in the health effects of radiation and nuclear power, in the eyes of the media we were by default their experts, the go-to professionals who were willing to demythologize the hokum of nuclear plant safety and connect the dangerous dotted line from uranium mines to uranium bombs. But we had to be sure not to get ahead of ourselves. The dots had been there all along, of course, but never before connected in terms of health, safety, and the terminal plague of nuclear war. The nation's love affair with Atoms for Peace and "energy too cheap to meter" was ending with a meltdown.

Each phone call meant a new member or another invitation for us to speak to a hospital, medical school or society. Carol charted where our new members were coming from with pins on a map of the country. Helen was a tour de force. With an Australian lilt to her voice, a totally

non-academic indignation and Armageddon as her text, she appeared to channel the oratory fire of Margaret Sanger and Martin Luther King. Wherever she spoke she was box office. And when she spoke, clusters of new members appeared as bristling colored pins on Carol's map of the country. The pins added up to tens, scores, and hundreds. As some point we ran out of pins.

The petition may have been most effective immediate attention-getter of anything to appear in the *New England Journal* since its founding in 1812. As calls flooded in, we collected names and solicited dues. Checks began to dribble in. Within a few weeks we were an organization of sorts, or at least one with a mailing list. A decade after PSR had faded away in the 1960s it was being reborn under the radioactive plume of the Three Mile Island nuclear power plant. Membership meant strength, we all knew, and we all worked to build it. Alexander Leaf, an unassuming Physician-in-Chief at Mass General, walked the wards with membership forms in his white coat. Thomas Chalmers, a pioneer who developed randomized testing of treatments, manned tables at professional meetings handing out cards for PSR. "Tom, what are you doing sitting here?!" said a shocked colleague. With a nod to Henry David Thoreau, Tom asked pointedly, "What are you doing not sitting here?"

But it was one thing to have members, and another to organize them into a coherent force. Our Hot Group was young, ambitious, highly skilled at learning, and because of Hiroshima and the work published by the previous generation of PSR doctors, already versed in the medical effects of nuclear war. In time we actually became the experts the public thought we were in the first place.

We were on a fast track to get up to speed about radiological medicine, the nuclear fuel cycle, the problem of nuclear waste, and of course, the likelihood of nuclear accidents. With the accident at Three Mile Island so close in time to our petition, the emphasis on abolishing nuclear

power set aside the far greater danger from nuclear weapons for another time. But not for long. As our expertise grew, so did our confidence. We presented information at grand rounds in hospitals around the country, and eventually, in other parts of the world. We wrote papers in medical journals, published editorials in newspapers, all the while strategizing with each other into the early morning hours on how to fight nuclear power and weapons.

It is hard to know which person was more responsible for our exponential growth in the following months, The Hot Group or Ronald Reagan. The Russians had invaded Afghanistan, allowing the Republicans to sweep into power on a stream of anti-Soviet rhetoric. From the point of his election onward Ronald Reagan raised hackles, at least among progressives who feared he was as trigger happy as he sounded. At one point, not knowing his mike was live, he joked, "I'm pleased to tell you today that I've signed legislation that will outlaw Russia forever. We begin bombing in five minutes." Less of a joke was his call for even greater numbers of nuclear arms aimed at the Soviet Union. The Cold War was at a peak. Was a hot war far behind?

A day hardly passed without one of Reagan's appointees making similar pronouncements about the value of nuclear weapons. His director of the Arms Control and Disarmament Agency had only good things to say about a nuclear-armed South Africa. The vice president supported threatening the Soviets with a "limited nuclear war" if they moved towards the Persian Gulf. Henry Kissinger agreed, advocating limited nuclear attacks that in his mind could serve as an alternative to a general nuclear war.

To comfort us at home, Reagan claimed a nuclear war could be limited to Europe, especially once the Pershing II missiles were installed in West Germany, since they could decapitate the centers of Soviet command and control in six minutes and strike Soviet silos on the ground. In the event of a threat of war, NATO planned to "fire a nuclear weapon for

demonstration purposes, [to] maintain violence at the lowest level.” Reagan’s Secretary of Defense called for a 180-billion-dollar strategic arms buildup. To prevent Soviets from destroying our missiles on the ground, the Reagan administration proposed to put them on trains and keep them in constant motion. The reckless proposals seemed endless.

Finally, there was finally the real possibility that Armageddon was being taken completely out of human hands and directed by an automated system in place called “launch on warning.” False threats had nearly started a nuclear war on multiple occasions. They had been caused inadvertently by a technician who had inserted a training tape into a NORAD computer falsely signaling a Soviet attack. Radar errors had misreported sunbeams as incoming missiles. Nuclear weapons were on a hair-trigger, and when a mentally ill man wounded the President, the Defense Secretary ordered nuclear-armed bombers in the air.

The Soviets were busy with their own part of the arms race. If the Americans could develop a Star Wars program aimed at shooting down incoming Soviet missiles, why shouldn’t they just send more missiles to overwhelm our defenses? And so the Soviet arsenal swelled to 25,000 warheads, this with no public recognition on either side that only ten or so missiles striking soft targets in the U.S. would be needed to kill millions of people and reduce the heart of each country to rubble. For comic relief, a Reagan appointee in the Defense Department said that we could recover from a general nuclear war if we all dug holes in the ground, pulled doors over the holes, and covered them with dirt. “It’s the dirt that does it,” he exclaimed.

There was so much to do that any reasonable idea seemed to be met with a collective yes. Our M.O. was yes to the creative, no to the hare-brained. Our credibility depended on keeping our message based in irrefutable medical fact. Once the insanity of the nuclear arms race was clearly evident to all, an informed people would shift our course to rational policy. Katherine

decided we needed a common reference on the medical issues of radiation exposure, and wrote PSR's first book, *Health effects of Nuclear Power & Nuclear Weapons*.

More books would follow in the months ahead—Eric's *Last Aid*, Jennifer's devastating critique of civil defense, *The Counterfeit Ark: Crisis Relocation for Nuclear War*, and the joint effort of Chris Cassel, Mike McCally and myself to edit and publish a collection of classic papers in the field, *Nuclear Weapons and Nuclear War*. When we approached possible contributors, no one refused. Joseph Rotblat, Jerry Frank, Henry Steele Commager, Barbara Tuchman, and George Kennan, among others, agreed to participate. We were especially anxious to publish the recent pastoral letter by the National Conference of Catholic Bishops, *The Challenge of Peace: God's Promise and Our Response*. Would they give us permission? It was very long. Would they let us edit it? I felt the job entailed taking a red pencil to the Sermon on the Mount. It fell to Mike to approach Father Hehir, the letter's principal author. Despite our fears, Hehir had no problem with our project. And so a young doctor with no particular religious sentiment sat down in a bar in Boston over a beer and sandwich and took a red pencil to arguably the most important document to come out of American Catholic bishops in the twentieth century.

Papers, review articles, and book reviews flowed from the Hot Group. We debated Pentagon physicians in the *New England Journal* over their plan to take over American hospitals in the event of nuclear war; I wrote a review for the *Yale Journal of Biology and Medicine* on the psychology of the arms race, pointing out the human inclination to divide itself into antagonistic factions, which became all the more toxic when each was armed with nuclear weapons. To keep PSR members on point, Katherine started a speakers' bureau.

Keeping us all on message was easier said than done. And in the Hot Group we began to run into questions without easy answers. Should we change our name? Responsibility was a

broad label. Was it too broad for a group challenging nuclear technology? And how could we integrate the ground swell of interest we were receiving from across the country?

The Hot Group formed a board inviting activists from about the country. We hosted them in our home. Tensions ran high, not from a lack of good will as much as from our widely different views on where our energies should go. People Albuquerque had worked with uranium miners suffering from radiation-induced cancers. In San Francisco there was worry about a possible meltdown by the Diablo Canyon power plant located less than a mile from a seismic fault. Activists from the Puget Sound were concerned about the Trident sub base there, each sub armed with the explosive power of over 4,000 Hiroshimas.

As we grew we needed a place larger than our living room to contain our doctors. In 1981 the Board met in historic Faneuil Hall in Boston. The room was where the American relief movement for Armenians began in 1894, dominated by a painting depicting Daniel Webster defending the Union against a secessionist. Noticing the painting on the wall of Daniel Webster defending the Union before the Senate, Helen remarked, "Perhaps one day our pictures will be up there." She was serious. Perhaps we needed to be grandiose to do the work. In my own case, my chronic insomnia was an asset. It helped me work long hours into the night writing PSR's new By-Laws, scholarly papers, and op-ed pieces for the PSR Newsletter and Boston Globe under the watchful editorial eye of our secretary, E.J.

The problem of a common vision continued to haunt us. At first all we could agree on was that the problem was anything "nuclear." After that, we divided on the issue of fighting nuclear power or fighting nuclear weapons. Other ideas of social responsibility made their way through our Hot Group. Smoking was killing nearly a half million Americans a year. What about poverty which was related to so much disease, argued the social medicine people. And nuclear

waste? It would never go away. Should we focus on the fact that New Mexico was turning into a nuclear waste dumping ground, or the submarine base in Seattle which an archbishop called “the Auschwitz of Puget Sound”? Would such noble divisions tear us apart? Eric brought in his old Harvard chem professor, George Kistiakowski, who was co-inventor of the explosive trigger for the Hiroshima bomb. Kisti made short work of our power-weapons dilemma. He exclaimed with feeling, “Nuclear power is only the pimple on the pumpkin!” His point was decisive. Nuclear power was moved to one side, and the Hot Group took on nuclear war.

I didn’t want PSR to become a paper organization of members who paid dues and received a bumper decal in the mail, but to empower activists at local levels. Tip O’Neill, the Speaker of the House, had famously said, “All politics is local.” I argued with the Hot Group that the best model I could come up to shape the new PSR came from Mothers Against Drunk Driving, which had transformed laws in the country state by state. With this model in mind and doctors from around the country clamoring to join us, a chapter-based organization would meet our needs. Jennifer saw my point immediately. We made a good team. Once we convinced the Board of the need for chapters, chapters sprang up from coast to coast. In a few years there were over 140 in the country, with an estimated 40,000 members. Jennifer and I had come up with an idea that had legs.

On the other hand, we wanted chapters voicing a common message. Katherine’s speakers’ bureau helped, but I pushed for a newsletter for that purpose. I was its first editor. I began to turn out a stream of editorials on a range of topics: a comparison of the world views of nuclear physicists and those of physicians; the MX missile; Richard Perle; and the nuclear reflections of prominent leaders in the Catholic Church. In fits of hutzpah I solicited editorials from George Kennan and the Director General of the CIA, William Colby. When the director of

the Department of Public Health in Pennsylvania claimed that radiation from TMI had caused an increase in the number of babies with thyroid disease, I was able to get the data backing his claim and publish them.

But the powerhouse punch and signature PSR production was the “bombing run”—a symposium examining the estimated destruction from a single nuclear weapon over a single American city. In late 1979 it began as a twinkle in Eric’s eye. He recruited Kisti to speak, and then turned around and contacted the Nobel Prize winner, Salvador Luria (Eric breezily called him “Sal”), mentioning in passing that Kistiakowski had already agreed. Would he help as well? In like fashion Eric put together a legendary line-up of authorities on science and nuclear war. I wasn’t the only one in the Hot Group with hutzpah.

For two days at the Harvard Science Center on February 9 and 10, 1980, Harvard and Tufts Universities hosted talks by world authorities on nuclear weapons production waste, the short and long-term effects of nuclear detonations on civilian populations, how a nuclear war might start, and our prospects for peace. The credentials of the speakers were breathtaking. In addition to former members of the Manhattan project was a parade of stars in this bleak and arcane world of scholarship, authors of the original *New England Journal* articles on nuclear attacks on civilians, a Nobel laureate, former members of the U.S. State Department, the Livermore Radiation labs, Los Alamos (where the American bombs were built), and the US Arms Control and Disarmament Agency. Eric had chosen well. This was not your standard academic symposium. Bernard Feld, the editor of the *Bulletin of the Atomic Scientists*, ruefully recalled his work that led to the destruction of Hiroshima, Nagasaki, and the ruinous arms race afterwards. “I was there at the beginning. I’m guilty of the Original Sin.” Howard Hiatt, Dean of the Harvard School of Public Health, after describing the impossibility of a medical response to

nuclear war labeled it “the final epidemic,” a phrase that would reverberate around the world for years.

The centerpiece of the symposium was Jack Geiger’s description of the destruction of Boston from a single one-megaton bomb in vivid terms. “Buildings will undergo sweeping and pancaking,” he intoned, sounding like Walter Cronkite on espresso, matter of fact in describing the deaths of a million people, with an undercurrent of outrage. This was an academic describing “the unspeakable but not the incalculable.” Jack’s talk would serve a model for such “bombing runs” in PSR chapters around the country. And at each presentation about the country the circles of destruction from blast, fire and radiation over each home city opened eyes, dropped jaws, and ended up on the front pages of local newspapers and evening TV shows. When E.J. transcribed the speech, she wept at the typewriter. These were the realities the government was not telling us.

In an unscripted move that would maintain the momentum of the symposium, Helen Caldicott took the podium at its end, summarized the previous talks, and convinced the assemblage to buy a full page ad in the New York Times in the form of a letter to President Carter and Chairman Brezhnev. We gave it the title *Danger, Nuclear War*. It was signed by the Hot Group, seven Nobel laureates, and more than seven hundred physicians and physicists. We urged the two leaders to meet with us to discuss the medical consequences of nuclear war. President Carter’s Under Secretary of State sent us a thank you note. Soviet Ambassador Dobrynin invited a delegation of physicians to Washington to receive a reply from Chairman Brezhnev. Only then did the Carter administration take us seriously. Helen, Eric, and Jim Muller, now a Harvard cardiologist, met with Dobrynin. Leonid Brezhnev’s letter said, “You may rest assured that your humane and noble activities aimed at preventing nuclear war will meet with

understanding and support in the Soviet Union.” Our delegates later met with White House counsel Lloyd Cutler whose interest in preventing nuclear war lacked enthusiasm.

Indifference was not the response of the New Yorker writer, Jonathan Schell. We had met at a family gathering in Cambridge and told him what we were doing at PSR. He was hooked. I made sure that he would attend our next symposium, in New York City, in September of 1980. He came, went home, and wrote *The Fate of the Earth*, a milestone in the movement.

Since people wanted to know what nuclear weapons would do to them personally, the bombing run was counterintuitively quite popular. Because I had studied small particle physics before medical school, I tended to attract speaking invitations from technically oriented institutions, including MIT, the Wood’s Hole Oceanographic Institute, and the Max Planck weapons group. Resting my talks on a bed rock of data from the Japanese bombs, radiation medicine, the logistic requirements of treating burns and blasts, and the technical specifications of current weapons such as heat and overpressure, I felt secure in the face of all comers.

As we earned credibility and built a national movement, synchrony was in the air. Randall Forsberg was building the Nuclear Freeze movement, a simple idea that people quickly understood. We met with Gary Hart (he seemed to know very little about nuclear weapons). Jennifer and Helen met with George Kennan. I did a joint symposium with Flora Lewis of the New York Times and former Secretary of State, Cyrus Vance, at Mt. Holyoke College. One Sunday morning I lay on the couch recovering from overdoing it and reading the Ideas and Trends section of the New York Times. I turned to a beautiful photograph of Andrei Sakharov, the Soviet dissident, and his wife then under house arrest in Gorky, in a familial portrait of sadness and wisdom. Sakharov had built the Russian bomb, and then had become a Soviet pariah when he turned against nuclear proliferation, even after winning the Nobel Peace Prize in 1975.

“What a classic photo,” I said as I held it up for my wife to see. And then I turned the page and saw a photo of myself taken during a talk I had given at MIT. I had unruly hair, a scraggly beard, and the atomic victim in the slide behind me looked himself like a mushroom cloud. “Speaking of classic photograph—” I quipped.

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Preventive Medicine for Nuclear War

Ideas & Trends continued



that the public did not rally to previous authoritative estimates that nuclear war could kill 100 million Americans because of a “general derelict psychosis.” The overwhelming numbers made the prospect of nuclear catastrophe unimaginable, he said. But the public can respond to the current campaign because it points to the plight of the tens of millions of casualties who would die slowly and over a long period from lack of medical attention. And that prospect, the haunting image of being among those injured survivors of nuclear war, is one that few individuals can easily accept, he said.

Although past efforts by doctors to slow the arms race have had little long-term effect, Dr. Howard Hiatt, dean of the Harvard School of Public Health, was optimistic for the future. The “gilliam of the medical establishment” — medical schools and societies — are now getting involved, he said. Last week, faculty members at the Harvard Medical School proposed “The Health Aspects of Nuclear War” as a new elective course for students. Other medical schools are taking similar action. Articles focusing on the results of nuclear war are appearing in leading medical journals. Professional groups, including the American Medical Association, the World Medical Association and the World Health Assembly, have adopted resolutions aimed at preventing nuclear war. “This is not a fringe movement,” Dr. Hiatt said.

Scientists Step Out

Scientists opposed to the nuclear arms race are also mobilizing. The Federation of American Scientists, founded by men and women who created the first generation of atomic bombs, has reconstituted a network of campus organizers and is circulating a petition criticizing the notion that nuclear war can be limited or won. The Union of Concerned Scientists, which in recent years has focused almost exclusively on nuclear power, sponsored convocations on nuclear war last month that attracted an estimated 100,000 people on some 150 university campuses. “We had a nerve—we didn’t know was there,” said Eric Van Loon, the organization’s executive director.

Why this resurgence of concern over nuclear arms? The scientists and physicians involved in the effort say the accelerating buildup of weapons and the failure to negotiate meaningful arms control agreements have generated considerable fear. Loose comments by high officials of the Reagan Administration regarding the possibility of winning a nuclear war or of setting off deconstruction nuclear blasts has heightened that fear. “The risk of nuclear war has gone up and will continue to go up unless there is a major change in disposition,” says Dr. Henry Kendall, chairman of the Union of Concerned Scientists. “That is the thing that has gotten everybody’s teeth on edge.” Some scientists have also come to believe that other issues, such as nuclear power, are receiving adequate attention, while nuclear war is being neglected by comparison.

The morality of working on military weapons, a subject of sharp debate in the past, has received little attention lately. A small group in Massachusetts called High Technology Professionals for Peace has started an employment service to help scientists move from military to civilian research. Dr. Warren Davis, the organization’s president, quit defense work himself five years ago. He said he was “bothered by the morality of working on headish things that might end up killing hundreds of millions of people.” He said he also deplored the lack of professional attention in defense work.

But Dr. John C. Browne, leader of the physics division at Los Alamos National Laboratory, a well-

Henry Abraham, a member of Physicians for Social Responsibility, speaking at nuclear disarmament convention at M.I.T. last month. Slide projection behind him shows 1945 Hiroshima bombing victims.

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By PHILIP M. BOFFEY

Even before the first atomic bomb exploded at Hiroshima in 1945, thoughtful scientists began worrying over the social and political implications of the awesome weapon they had created. Physicians took the lead, for as Robert Oppenheimer, scientific head of the Manhattan Project, later wrote, “The physicians have known sin; and this is a knowledge which they cannot lose.”

That knowledge, however, did not generate a common philosophy. Some scientists saw nuclear weapons as a deterrent, a threat of war as security, one that might eliminate war forever. They advocated that the public did not rally to previous authoritative estimates that nuclear war could kill 100 million Americans because of a “general derelict psychosis.” The overwhelming numbers made the prospect of nuclear catastrophe unimaginable, he said. But the public can respond to the current campaign because it points to the plight of the tens of millions of casualties who would die slowly and over a long period from lack of medical attention. And that prospect, the haunting image of being among those injured survivors of nuclear war, is one that few individuals can easily accept, he said.

Although past efforts by doctors to slow the arms race have had little long-term effect, Dr. Howard Hiatt, dean of the Harvard School of Public Health, was optimistic for the future. The “gilliam of the medical establishment” — medical schools and societies — are now getting involved, he said. Last week, faculty members at the Harvard Medical School proposed “The Health Aspects of Nuclear War” as a new elective course for students. Other medical schools are taking similar action. Articles focusing on the results of nuclear war are appearing in leading medical journals. Professional groups, including the American Medical Association, the World Medical Association and the World Health Assembly, have adopted resolutions aimed at preventing nuclear war. “This is not a fringe movement,” Dr. Hiatt said.

Scientists Step Out

Scientists opposed to the nuclear arms race are also mobilizing. The Federation of American Scientists, founded by men and women who created the first generation of atomic bombs, has reconstituted a network of campus organizers and is circulating a petition criticizing the notion that nuclear war can be limited or won. The Union of Concerned Scientists, which in recent years has focused almost exclusively on nuclear power, sponsored convocations on nuclear war last month that attracted an estimated 100,000 people on some 150 university campuses. “We had a nerve—we didn’t know was there,” said Eric Van Loon, the organization’s executive director.

Why this resurgence of concern over nuclear arms? The scientists and physicians involved in the effort say the accelerating buildup of weapons and the failure to negotiate meaningful arms control agreements have generated considerable fear. Loose comments by high officials of the Reagan Administration regarding the possibility of winning a nuclear war or of setting off deconstruction nuclear blasts has heightened that fear. “The risk of nuclear war has gone up and will continue to go up unless there is a major change in disposition,” says Dr. Henry Kendall, chairman of the Union of Concerned Scientists. “That is the thing that has gotten everybody’s teeth on edge.” Some scientists have also come to believe that other issues, such as nuclear power, are receiving adequate attention, while nuclear war is being neglected by comparison.

The morality of working on military weapons, a subject of sharp debate in the past, has received little attention lately. A small group in Massachusetts called High Technology Professionals for Peace has started an employment service to help scientists move from military to civilian research. Dr. Warren Davis, the organization’s president, quit defense work himself five years ago. He said he was “bothered by the morality of working on headish things that might end up killing hundreds of millions of people.” He said he also deplored the lack of professional attention in defense work.

But Dr. John C. Browne, leader of the physics division at Los Alamos National Laboratory, a well-

Bringing the Point Home

Physicians stress the horrifying medical conse-

has seen its membership grow from 1,300 to 5,000 over the past year. Its symposiums on the results of nuclear war have attracted up to 3,000 participants, including large numbers of health professionals. Several members of the organization have also formed a group to coordinate activities with physicians abroad; affiliates are operating in Great Britain, Germany, the Netherlands, Belgium, Finland, Sweden, Switzerland and Canada. A doctors’ committee is also active in the Soviet Union and has been allowed to publicize anti-nuclear arms views widely.

Symposia of bombing runs proliferated around the country. Quiet Alexander Leaf had trained many of the department chairs at medical schools in every corner of the country. So he wrote each of them asking for their help in sponsoring local symposia and supporting local PSR

chapters. Creativity was in abundance. In Seattle Judy Lipton and her chapter co-sponsored a road race called Legs against Arms. It raised funds for arms control education and spread across the country as an activity for other chapters. Our commitment to academic substance paid off as support to prevent nuclear war came from the American Medical Association, the National Academy of Sciences, the American College of Physicians, and the American Association for the Advancement of Science. PSR inspired lawyers, architects, and educators to create their own groups to prevent nuclear war.

But the organization was changing. Helen's celebrity with the public was rising, but our confidence in her ability to adapt to the organization's changes was slipping. In a most unacademic gesture she accepted an offer from Pat Kingsley for "media representation." Helen proudly described her as "one of the major publicity agents for Hollywood film stars." Helen and PSR were diverging.

The country still needed to be educated. Physicians were trusted repositories of knowledge, dealing in topics at times painful and even fatal. The dataset had to be cool, consistent, and unimpeachable. Asking Helen to conform to such constraints was like asking a shooting star to pass through the eye of a needle. When the independent consultants suggested that she step down as president, she obliged. In the same year a Harris poll indicated that 79% of the country supported the Nuclear Freeze. A million people gathered in New York City to support it. PSR had awakened a nation.