

The Fourth Dimension of Biomedicine*

By Herbert L. Abrams**

SUMMARY- ABSTRACT

The three dimensions of biomedicine that we are familiar with need no amplification: patient care, research and teaching will preoccupy all of our professional lives in one form or another. The critical fourth dimension, which is “Activism,” represents a series of links to the greater world outside. In this short lecture, I intend to view this arena through the prism of my personal involvement in two Twentieth Century physician movements, designed to alter national and international policy so as to cut the risk of massive destruction of life and health. As I recount the impact of such movements, the meaning of the “Fourth Dimension” will become clear.

***Commencement Address, Stanford University School of Medicine,
June 16, 2007, 2:30 P.M.**

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It's a pleasure and an honor to share some thoughts with the extraordinary women and men in this convocation. Yesterday, you were medical and graduate students, and tomorrow you will join the transplanetary society of physicians and biomedical scientists whose lives of service and intellectual engagement have absolutely no bounds. I congratulate you, together with your assembled families, friends and faculty, and welcome you to this unique sisterhood and brotherhood.

I've been asked to say a few words about my career and my involvement in diagnostic imaging and the greater world outside. In brief, I went to medical school to become a psychiatrist; discovered the excitement of internal medicine at the end of my second year; and began to understand in my third year that radiology was the quintessence of diagnostic medicine. Whether it was the brain, the heart, the lungs, or the skeletal system, radiologic imaging provided the road map for virtually all surgical and many medical therapies. After a few post-graduate years in internal medicine, I came to Stanford in

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1948 for residency training in radiology. I remained on the faculty, and with the move of the medical school from San Francisco to Palo Alto in 1959, I became professor and director of the diagnostic radiology division. In 1967, I accepted the challenge of developing radiology further at Harvard Medical School as Chairman of the Medical School Department, with day-to-day operational responsibility for radiology at the Brigham and Women's and Dana-Farber hospitals. I returned to Stanford in 1985, eighteen years later.

Throughout this period, my laboratory and clinical research focused on cardiovascular pathophysiology and imaging. That was the centerpiece of my work in the three dimensions of medicine: patient care, research and teaching. I had the pleasure of doing the first selective coronary arteriogram at Stanford in 1960, and, with Ricketts, of designing and describing in the JAMA the first percutaneous transfemoral pre-shaped catheter method, the basis of modern coronary arteriography.

We're all aware of the breadth and import of those three dimensions, but what in the world is the "fourth dimension," my topic for today? The answer to that question will become clear as I reflect on my involvement in two physician movements during the last century.

Earlier this year, on the weekend of February 23, 2007, I had the opportunity to meet with some of the next generation of leaders in one of those movements, when Stanford was host to the annual national meeting of Students Physicians for Social Responsibility. I was privileged to address

and then to listen to 100 bright, energetic and informed attendees from medical schools across the nation present an impressive set of papers on nuclear issues, the environment, and violence prevention at many levels. It was like a shot of adrenaline.

For many years I had served on the National Board of “PSR”, as Physicians for Social Responsibility is referred to. It began as an effort by a small number of physicians in late 1961 to “study the dilemma in which the world now finds itself.” This concern was expressed in a series of articles in the New England Journal of Medicine on the human and ecologic effects of a nuclear attack, and the physician’s role in the post-attack period.

PSR, with other groups, was active in demanding a ban on nuclear testing, collecting hundreds of baby teeth and demonstrating that they contained Strontium 90. Together with worried parents, they took the teeth to Washington. As the clamor about the hazards of fallout around the globe grew louder, an atmospheric test ban was proposed and signed on August 5, 1963.

Towards the end of the seventies, PSR was galvanized once more by the heightening alarm over nuclear weapons stockpiles and the tension of the Cold War. After a series of symposia held around the country on college campuses, including Stanford, its membership increased rapidly and many new chapters were formed.

In the summer of 1979, a few of us in PSR joined together to discuss an international organization to form a bridge between the East and West. The goal would be to inform and educate physicians, the public, and policy makers in many nations on the life and health impact of nuclear war. International Physicians for the Prevention of Nuclear War, known as IPPNW, was formally incorporated in the spring of 1980. In March 1981, the first international congress was held, with about seventy participants from the United States, the Soviet Union, Japan, Canada, France, the United Kingdom, Norway, Sweden, and the Netherlands. An appeal to the United Nations and to the heads of all governments emerged from the meeting, urging a set of measures for the avoidance of nuclear war.

IPPNW grew rapidly through the years, with sixty national physician groups meeting in a series of congresses in Cambridge, Amsterdam, Helsinki, Bonn, Moscow, Montreal, Hiroshima, Mexico City, and Beijing. In 1985, it was awarded the Nobel Peace Prize, and as its founding Vice-President, I had the pleasure, along with my wife, of sitting next to the King of Norway at the ceremony in Oslo. The chairman of the Nobel committee explained the choice: "IPPNW has educated us and the world on the dangers to life and health that nuclear weapons represent. The prize expresses a hope that bridges can be built over the chasms that represent our fear of the future."

With the end of the eighties, we had come a long way from the threat of a massive nuclear exchange between the USSR and the USA. There was a sense of wonder that the Northern Hemisphere had managed to weather the Cold War without an episode of nuclear violence. IPPNW leadership communicated directly with Gorbachev and had major hearings with some

in Congress and the executive branch. Doctors were engaged in their traditional role of preventing disease and death. In 1987, with international pressure high, Reagan and Gorbachev signed the treaty to eliminate Intermediate-Range nuclear weapons

Beyond the impact of IPPNW on policy decisions, it provided an extraordinary opportunity for person-to-person exchanges, and ultimately communication with a larger audience during the Cold War. I was asked to lead a party of eight physicians to the USSR in July 1985. It was a time of tension, the Russians highly suspicious of Reagan's intentions to launch a preemptive strike under an SDI umbrella, the Americans viewing the Soviet nuclear arsenal and policies with great distrust. What good could our visit possibly do?

Importantly, there was the richness of the direct interaction with Soviet physicians and health workers. There was also the unusual opportunity to express the concern of many Americans over the nuclear arms race before large audiences of health professionals, and on Soviet television. During our ten-day visit to Moscow, Tbilisi, Kiev and Leningrad, we presented graphic lectures on the "Medical Consequences of Nuclear War" and documented the sheer size and composition of the Soviet stockpile, side-by-side with that of the U.S. As we concluded our trip with our daily exchange of ideas and observations, there was a powerful feeling that one visit was worth a thousand books.

Subsequently, I was contacted in the United States by the daughter of a Soviet dissident in chronic congestive heart failure, desperately in need of

valve replacement. The prosthetic valves were not available in the USSR at the time. When I reached Moscow for an IPPNW meeting, I was able to transfer the valves to the dissident's brother, who came to my hotel from his home in Leningrad. Subsequently, cardiac surgery was successfully performed and he became asymptomatic. IPPNW was the bridge.

At our meeting in Cologne in June 1986, a few of us expressed our concern to our Russian colleagues about a Soviet cardiologist named Vladimir Brodsky, who had been imprisoned as a member of the Moscow Trust Group, the Soviet analogue of Human Rights Watch. We were assured that his case would be pressed with Soviet authorities. He was not released. In early August, I sent a letter to Dr. Chazov, the head of Soviet IPPNW and director of the Moscow Institute of Cardiology, in which I said: "Dear Eugene, I write to you in the hope that it may be possible to follow through on the review of Brodsky's case and have more encouraging news about him in the very near future."

In early September, at the World Congress of Cardiology in Washington, I had breakfast with Chazov. He informed me that Brodsky's wife had already left the Soviet Union and was in Vienna, and that Brodsky was now out of prison, back in Moscow, and would be released within days. Two weeks later, my wife and I were awakened by an excited phone call from Switzerland at 5:00 A.M. from Brodsky and his wife, both now safely out of the USSR, and thrilled to be free. We all had dinner at our house on the campus a few months later, and received a first-hand account of their unhappy journey, and its happy ending.

On May 28, 1987, at the time of the Moscow IPPNW meeting, I met with Andrei Saccharov and his wife, Elena Bonner, and had supper at their apartment. It was only five months before that Gorbachev had invited the great Soviet physicist, architect of the Soviet H-bomb, Nobelist and the USSR's most famous dissident to return to Moscow after seven years of internal exile in the closed city of Gorky. Saccharov had written in 1980 that "the questions of war and peace and disarmament are so crucial that they must be given absolute priority." But with Glasnost in the air, the matter of Human Rights continued to pre-occupy him, and his voice was never stilled.

These are just a few examples of the "bridge" function. Beneath a broad umbrella, physicians from vastly different national, geographic, political, ethnic, economic and value-based backgrounds succeeded in carrying on a conversation, effecting change, educating each other and our respective constituencies, and pressuring government to act so as to moderate the huge threat to human health and life. The mobilization of thousands of medical voices towards a life-enhancing societal goal can create a power bloc of great influence.

Participation in such a movement is a single facet of Activism, which I consider the "Fourth Dimension" of Biomedicine. Activism means engagement, involvement, sharing a voice or an activity, individual or joint or cooperative action in an area of need. There are many avenues, levels, and values that converge on the term. It represents an understanding that there are large areas beyond our professional work and achievements that link to urgent continental or planetary needs. It stems from the connectivity of all humans and the awareness of that great universal community in which

hundreds of thousands of smaller ones co-exist. It reflects a sense of values that derive partially from the Enlightenment and persist in religious and secular humanism over time.

You may ask, “Why expand the notion of participation in the vast array of areas of need to Stanford medical and graduate students, for heaven’s sake?” After all, your projects in the last year or more have taken you to 48 countries in seven continents. You have spent time in Zimbabwe, Mongolia, Nepal, Tanzania, Nigeria and China. You were involved not only in research but also in vaccine programs, dehydration assessment, improving maternal health and other important goals.

The answer is that you are entering a new phase, a giant step on the road to the independent lives you will all lead, with huge demands on your time and energy that may limit your vistas as the 24 hour day consumes you. You may find it difficult to find the time to savor and enjoy the activist experience.

During meetings past midnight in PSR and IPPNW we often asked ourselves, when time was short and competing priorities urgent, what can any one person do? Why waste our energy? Can we justify this “digression” from the professional roles that we have trained for all our lives?

At any juncture in the life of a free society and the democratic process, we ask ourselves the same question: what good does it do? One voice in the wilderness cannot change history; add a few more or even a few thousand more and they represent a tiny fraction of the whole.

But as the day ended in Oslo at the time of the IPPNW Nobel award and the procession moved from downtown Oslo to the Aula, the great auditorium, there was a strong sense of faith in the renewal of the individual and one person's ability to have an impact. We could then recall the words of Robert Kennedy in Capetown in 1966:

“Each time a man stands up for an idea, or acts to improve the lives of others or strikes out against injustice, he sends forth a tiny ripple of hope, and crossing each other from a million different centers of energy and daring, those ripples build a current which can sweep down the mightiest walls of oppression and resistance.”