[The following editorials were published in The PSR Quarterly, Volume 3, 1993]

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Miles To Go

The commentaries in this issue all aim to expand our understanding of global issues that are central to the concerns of physicians and other informed professionals -- nuclear weapons, the arms race, the environment, and population.

The issues are not simple. Thirty years of debate, however, have burnished key aspects of our assessment of nuclear weapons and the arms race. We do not need much explanation for the slogan of the Manhattan II Project: "The Bomb. We Built It. We Can Take It Apart." We know about the bomb, and its origins, and its capacities. We know many in the pantheon that produced this "Destroyer of Worlds," many who spent their remaining years trying to save us from the threat they had created. During the arms buildup of the 1980s we became close and tireless critics of various hard-line strategies and proposals designed to outbluff and outspend the Soviets that succeeded in distorting and pauperizing our own society and placing the world in great jeopardy. Yet those criticisms are less relevant now. The rapid pace of events in the early 1990s has splintered and destabilized control of nuclear weapons, permitted intensifying proliferation of this technology, and lulled many into thinking that the threat is over, rather than just less visible. Hence the essays in this issue by Musil and Ellsberg and by Sidel -- one tracing the history of the new educational campaign to reinvigorate consciousness about the remaining nuclear weapons that we have, despite our best efforts, still allowed ourselves to live with; the other painting with a broad and passionate brush the dimensions of the world trade in arms and the profound challenges we still face.

When we turn to the environment, and, in particular, toxic contamination, we note at once that risk assessment can have finer features than nuclear war.
No sensible person could dispute the technical estimate of what a 100 megaton attack on U.S. cities [1] or a 6,500 megaton nuclear attack on the continental U.S. [2,3] would in gross outline do to the earth and its people. Yet in the commentary and letters section, we see facets of risk assessment debated in the context of determining the effects of environmental lead exposure on childhood growth and development. In the book review section, the health effects of low- and moderate-level radiation are subjected to thoughtful analysis. The methods of epidemiology provide a powerful approach to the assessment of health risk in populations, but when the effects of toxins at low doses are subtle, or extend over years to decades, these methods leave much that can still be contested. In depicting the difficulties of conveying these nuances in Russia, Tutorskaya underscores what Mauss explores in

her opening essay on lead, that when we commit to actions of social responsibility, we must first assume the intellectual responsibility of acting only on what our best knowledge suggests is true, or probable, or plausible, over all other explanations. In this vein, we also present in this issue the response of Scarr and Ernhart to earlier articles on lead by Needleman and Mushak, along with rebuttals from the latter to the points that are raised.

We return to large questions, bounded only by informed speculation, with Omenn's discussion of population growth and the carrying capacity of the world's ecosystems. As with nuclear war, there is no way to run this experiment twice. Either we act now, in some uncertainty, to forestall a great catastrophe, or it is upon us and too late. It is very difficult to accomplish the required present action and much easier to say it is not necessary. So we swing around the false question, is action necessary, when our focus should be on the real question, what can we do? Although we can take comfort in the current structure of this policy dilemma by discerning its similarities to the early discussion around nuclear weapons and nuclear war, we should also be dismayed. It has taken 50 years for most of the world to realize that most nuclear weapons should be abolished, and we have only started down the road of doing so. With population, we do not have that luxury of time, and it begins by being a much harder sell. Until a social and economic context can be promised where such action has rewards, not to produce more babies is far less intuitively reasonable than not to produce more bombs.

As the issues we address become more complex, we should not lose sight of our intent. In the service of life and the environment, we seek to avert threats of massive or far-reaching import. Determining what constitutes threat of high magnitude is arduous, particularly in settings where information is accumulating and real knowledge remains limited [4]. Stewardship has its dry moments, but also, as spring is coming, its returns. We would not be here, obligated to certain scientific tenacity, had we not lived through the high-stakes peril of the 1980s, and helped change, for the better, the world we still struggle to understand.

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Vol. 3, No. 2—June 1993

Tracking the Pale Horse

During the 1840s, Edwin Chadwick, as Secretary to the Poor Law Commissioners in England, based his argument that cities were unhealthy places in which to live on a comparison of rural and urban death rates [1]. His early use of statistics on death has since been celebrated as marking a watershed in the development of the field of public health as well as contributing to major reforms in English sanitary conditions during the second half of the 19th century [2,3].

As a subject of inquiry in the field of public health, death is not a definitive end point but a symptom of underlying disorders of populations. Where and in what manner people die, when in their lives and in what season of the year or at what time of day, who succumbs and who does not -- these are the questions that structure the epidemiologic approach to death. The answers are as much about life as they are about death. They allow us to build a set of associations between observed aspects of life and enumerated deaths, a set of associations that can, if confirmed repeatedly through many observations, lead us to attribute to these connections not just association, but cause.

We can then begin to delve more deeply into what the causal mechanisms might be, and, often simultaneously, into what might be done to prevent or forestall these deaths, so demonstrably connected or associated with certain behaviors, certain proximities, certain ages.

Compared to the refinements available for the study of death in civil society, the epidemiology of war, disaster, and human rights abuse is in a state of relative infancy [4,5]. Although it might appear at first glance that the common characteristics of these settings -- social or environmental disruption, increased violence and threat to human life -- would make the search for cause of death rather straightforward, it is evident that the more we can specify how and why people die in such stressed circumstances, the more complex the connections turn out to be. The two articles published in this issue, one enumerating Iraqi deaths during the Gulf war and the other tracking violent deaths of rural activists in Guatemala, present very different aspects of this complexity. In Iraq, the connections between the war and civilian deaths were ecological: the destruction of infrastructure in

major Iraqi cities subjected an urbanized population to sudden and severe privation. In Guatemala, the connections were political: deaths occurred to people in certain geographical areas during particular periods of political activity, suggesting assailants of a specific partisan affiliation.

As these two articles demonstrate, a matter of central importance in building these understandings is the development of methods that can be used in the field or at a distance to construct accurate estimates of numbers and demographic characteristics of those who have died. Wars, civil conflicts, and terror undermine the administrative structures that support the recording and collection of data. Daponte applies standard demographic methodology to uncertain and overlapping data bases, requiring an imaginative reconstruction of the age-sex characteristics and size of the prewar Iraqi civilian population that she then matches to estimates derived from fragmentary survey data obtained immediately after the war was over. Yamauchi expands upon usual methods of cumulating deaths from several overlapping registries, and then takes the distinctly unusual step of placing these deaths in physical space and real time, thus creating a geo-temporal death mask for the face of rural Guatemala.

We present these two articles to an audience familiar, from another time, with the ways in which analytic reconstruction of deaths can promote understanding and determine policy. Since the early 1960s, those concerned with the health of nations have employed the public health model, and in particular its epidemiologic assessment of deaths, to analyze and then communicate the speculative consequences of nuclear war. The model was richer than occasionally recalled; it was not just that acute casualties were so numerous that there could be no cure, only prevention. It is true that Dr. Sasaki -- overwhelmed by burned patients thronging the courtyards of the Hiroshima Red Cross Hospital during the first few hours after 8 am, August 6,1945 -- was reduced to gentle automatisms, "wiping, daubing, winding, wiping, daubing, winding" [6]. But what was even more evident, to those who dared to become absorbed in the details, was that the longer-term casualties arising from the indirect global impacts of a nuclear war would logarithmically exceed the numbers dying in the near term from burn, blast, and radiation [7]. In the iteration of how many would die from what consequences, we forced the public and policy makers to move from the sanitized language of megatonnage to a confrontation with mass death. From there, it was a short journey to the recognition that nuclear weapons should not be used to wage war.

We study death in order to understand and affect how we live. Analysis of casualty rates after the Gulf war has produced the new insight that modern war, waged with high technology weaponry, can inflict unexpectedly heavy mortality on noncombatants. The Geneva Conventions forbid destruction of civilian life lines in time of war except in the context of extreme military necessity [8]. What constitutes military necessity must now, in future wars waged with similar methods, be defined and defended against what we have learned in the Gulf. Analysis of deaths by terror seeks to strip away the anonymity and aimlessness in which these bodies are

draped, to discern in the patterns formed by many deaths the paths of those who caused them. Evidence of systematic abuse is not enough to force societies to acknowledge and improve their performance on human rights, but without evidence societies can persist in denial for decades [9].

Our attention to death in this issue is balanced by commentaries that reflect the policy debates active among European, Canadian, and U.S. physician constituencies: the relevance of environmental issues; the ways in which we raise our children to embrace war; and the campaign to secure a comprehensive nuclear test ban, thirty years after the first step was taken. As we argue and act in the world, we must sift the news and stay alert to early warnings. Among these, the most sensitive and unequivocal are deaths in distressed populations. Hence our focus on this information and our encouragement to those whose efforts and courage bring it to public view.

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Fare Forward

Large and persistent problems haunt the pages of this issue: The complex impact of environmental toxins, the sweeping effects of environmental destruction, and the imbalance between our propensity for evil and our capacities to contain human violence. For the moment, however, in the midst of these discussions which we have had in different forms in previous issues and will continue to return to, we would like to direct your attention to the medium, rather than the message.

We have good news we must share with all readers about the future of this journal.

In March 1994, three years after its first issue, *The PSR Quarterly* will be relaunched as an international journal entitled *Medicine and Global Survival*. Our new publisher will be the British Medical Journal Publishing Group. In a sponsorship relation with Physicians for Social Responsibility (PSR), the new journal will continue to have a strong presence within the U.S. Guided by a new, international editorial board, however, *Medicine and Global Survival* will now have the opportunity of engaging throughout the world the scores of thousands of physicians, other health professionals, and members of the general public who share an abiding interest in the fate of the earth.

We are ready for this change. Many of our authors during these past three years have been from overseas and many of the articles have carried an international perspective. Even with its clear stamp as a U.S. journal, *The PSR Quarterly* has met with an enthusiastic response from readers in other countries. Our sense of a broader constituency has been confirmed in discussions at regional and international meetings.

Most importantly, as we seek to fulfill the mission of this journal, it makes eminent sense to shift the discussion of "medicine and global survival" to an international context. The causes and effects of major threats to human life and the biosphere know few natural or political boundaries. Medicine, as a disciplined approach to problems of the human condition, now aspires to be taught and practiced throughout the world in terms of a common language. Insights, questions, hypotheses, and proposals for action that arise from local analysis of local conditions can now, in the international forum created in the pages of this journal, be offered to a wide and diverse audience, stirring others elsewhere to think and write about the impact of these same major forces on populations they know well.

Our partnership with the British Medical Journal Publishing Group builds on philosophical attachments developed during the 1980s. The four part series in the British Medical Journal on the medical effects of nuclear war [1-4], published in 1981, early in the development of the arguments that physicians were marshalling against the arms race, had an electrifying effect on leaders in PSR and reinforced our judgment that in order to move the professional community on these matters it was essential to begin writing analyses for the medical literature. In 1983, the British Medical Association published The Medical Effects of Nuclear War [5], an uncompromising and comprehensive review that served for several years as the principal source book on the subject. Three years later, the U.S. Institute of Medicine, galvanized in part by the fact that no other U.S. medical organization had produced an expert report, organized a conference whose proceedings were published in *The Medical Implications of Nuclear War* [6]. In 1986, the BMA published an updated and expanded version of its analysis of the consequences of nuclear war, integrating what we all were learning about the longer term environmental and social effects of this potential catastrophe [7]. And, in 1988, the BMA issued a report entitled *Selection of Casualties for Treatment after Nuclear Attack* [8], which presented the deliberately disturbing argument that the extraordinary burden of casualties from a nuclear attack on Great Britain might force the postwar remnant government to exercise draconian measures of medical triage.

Beyond issues of nuclear war, the BMA and the *British Medical Journal* have dealt in depth with problems of medical ethics [9] and human rights [10] that are of direct interest to the readers of this journal. A pivotal thinker and advocate on these questions with in the BMA was John Dawson, the physician whose life and work we honored in these pages in our Profiles in Responsibility [11].

The new editorial board will welcome as one of its members Richard Smith, M.D., the editor of the *British Medical Journal* and the chief publishing officer of the British Medical Journal Publishing Group. A distinguished writer and editor, Dr. Smith will be a major contributor to this journal and will play a central role in our efforts to reach readers throughout the world.

Our outreach and access is sustained by the fact that the International Physicians for the Prevention of Nuclear War (IPPNW) has endorsed *Medicine and Global Survival* as "a journal of IPPNW." This designation underscores the support that IPPNW gives to efforts to develop an enduring scholarly legacy of the international physicians' movement and enhances our capacity to establish journal sponsorship relations with other IPPNW affiliates, in addition to PSR.

The promise of an international forum, constituted to reflect the interests of medical professionals in many countries, will allow us to learn more about ourselves and our world and to assess more realistically the extent to which we can enlist our skills and core values to promote and protect human and ecological health. From this expansive perspective on what lies ahead, we invite our readers to grapple with the

difficult questions presented in this issue. None of these questions apply only to one nation-state; and none will be adequately addressed unless they attract the talent and energy of people everywhere. A medical journal, inspired to speak about critical assaults on global survival, can at best have only a small voice in the global din. As the voice becomes more international, however, what is small may also hope to become more significant.

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Vol. 3, No. 4—December 1993

Embarkation

This December issue marks the last issue of *The PSR Quarterly* in its current form. It will be relaunched in March 1994 as the international journal, *Medicine and Global Survival (M&GS)*, published by the British Medical Journal Publishing Group.

We urge you as current readers actively to subscribe to the new journal, which you are being invited to do through mailings from PSR and on page 209 of this issue. We do not wish you to see a hiatus in your subscription and miss the opportunity of participating, at the beginning, in a dialogue reflecting many voices and many lands.

The editorial board of *M&GS* will have many more editors from around the world and fewer from within the U.S. The journal will, as has been the case to date, welcome both British and American English, allowing the author(s) to choose. We will be offering more sections and include more international news items and announcements. *M&GS* will be sent to thousands of physicians in Germany and elsewhere in a German language edition. Other editions in translation are now being planned.

In the midst of change, it is important to note that *M&GS* retains the same mission as that of *The PSR Quarterly*: to address through careful analysis and discussion the major threats to human and global survival: war and civil conflict; the development and trade in weapons of mass destruction; disaster, epidemic disease, and famine; environmental degradation and population growth. We will continue to seek to define the medical perspective on these issues, to expand the explanatory paradigm of public health to one encompassing the notion of ecological health, and to propose ways of thinking about and acting on these issues that enlist the talents and skills of health professionals throughout the world.

The articles in this issue are those that have sifted successfully through the process of editorial and peer review, as always. In addition, they have had to with stand scrutiny from a slightly different angle -- what should we be covering, in the last issue we send to virtually an exclusively American audience, and how should we be preparing this audience for things to come? The essays by Guidotti and Chernoff and the associated commentary address the environment, Speidel and two accompanying commentaries discuss population growth and development, and McNamara presents his current views on nuclear arms control and disarmament.

The two book reviews, one by Ehrlich and the other by Loretz, take the reader first to the global environmental crisis and then to a slice of the bomb's history during World War II.

Each of these topics rests squarely within the bounds of our mission. Each of these essays either traces the medical perspective through the discussion or highlights the questions we, as health professionals, have long raised (the dangerous misperceptions embedded in the arms race, the confluence of psychological and scientific factors in the minds of those who made the bomb). However, some of what you see here, if presented later to an international audience, would need further introduction. We would need to set the context for those essays that here proceed on the implicit assumption that the readers are familiar with the U.S. legal system or the U.S. version of the Cuban missile crisis and the cold war. With Spiedel's analysis of the population problem, which reflects an informed point of view that is widely accepted in the U.S. but deeply controversial in other parts of the world, we had the choice of running it with or without invited commentary from authors in developing countries. In the interests of introducing our U.S. readers to the dimensions of international debate on this topic, we decided to present as well arguments from those who see the problem quite differently. This decision contains the hint of things to come, whereby assumptions will be increasingly challenged, world views defined and critiqued, the quest for common ground sought more strenuously.

All of us participating in this expanded and complex exchange must strive to remain temperate, fair, and grounded in respectful and tough analysis of data and argument. In this we can rely to some extent on our core training in medicine and public health, where attention to rules of evidence, statistical inference, and professional tone characterize the nature of our discussions. We can also rely on the fact that those who read and write for this journal, now and into the future, are bound by a shared commitment to understand our world and improve our stewardship of it.

In service to this commitment, the journal now embarks on a voyage into international waters. We welcome all of you aboard.

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Once More, Dr. Strangelove

The most bitter metaphor in Dr. Strangelove, the wonderfully prescient film satirizing the nuclear arms race, was its description of a doomsday machine -- a system that would, in response to a first attack, automatically and irrevocably launch all the nuclear weapons in an arsenal, even if all the commanders were

already dead. Like all too many 20th century allegories of the human capacity for self-destruction, this one turned out to be more or less true: both Soviet and U.S. military establishments now admit that they were hard at work on doomsday devices. The joke was on us -- all of us on the planet -- and, as Robert McNamara notes, we almost got to the punch line.

In this issue of the Journal, contributors and commentators struggle with the issues raised by another doomsday machine, less discrete, seemingly less immediate, more remote in its effects, and therefore more inexorable than the threat of nuclear conflict. This doomsday machine has two major (and very much related) components: global environmental degradation -- global warming, ozone depletion, pollution, and the exhaustion of nonrenewable resources -- summarized by Guidotti and discussed by St. John; and global population growth, described by Speidel with commentaries by Sharan and Wakhweya.

Some of the data will be familiar to many readers, but not, perhaps, the unprecedented speed of change. Guidotti notes that a relatively conservative prediction of a global rise of 3° to 4° Celsius would, in a period of only 50 years, restore the climatic regime that existed on earth approximately 6,000 years ago, "a greater and faster change than at any time in the last 146,000 years." Speidel notes that it took 18 centuries to increase the global population from 250 million to 1 billion; now we are adding a billion (bringing the global total to 6 billion) in 11 years, with the developing world adding one million people every five days -- most to live in abject poverty -- and the slower-growing industrialized nations consuming resources in outrageous, and accelerating, per capita excess.

It seems clear that natural ecosystems and finite natural resources cannot accommodate changes of such speed and magnitude. The unanswered question is whether human systems -- economic, political, and cultural -- can respond effectively. The underlying uncertainty concerns the human capacity (and willingness) to look into the future down a long and complex causal chain, to make decisions on the basis of inevitably incomplete data, and to begin to deal now with the long-range consequences of individual acts and the social and governmental policies that drive them.

The goal of sustainable development, professed by all parties to the current debate, has survived its repudiation during the Reagan era by ideologues of unrestrained capitalism who defined population growth merely as the welcome production of new consumers, and environmental controls as subversive assaults on profit. Current descriptions of a New World Order that focus solely on the blessings of market-driven entrepreneurial forces -- this, in a world that Adam Smith never dreamed of -- make change equally difficult. So does the impulse to define the problem primarily as a North-South conflict; it does little good for the affluent North simply to thunder that "they" are making too many babies, and for the South to respond that "they" are living high on the backs of suffering third-world millions

and are interested in preserving inequity. Both charges ring true, but -- to paraphrase Gertrude Stein -- there is no "we" there.

Physicians have a modest but important contribution to make to the search for solutions, one that parallels our decades-long effort to predict the medical consequences of nuclear war. As that experience shows, defining potential health consequences can have a real effect on public policy choices, even when the data for risk assessment (dangers) and risk containment (solutions) are incomplete. "Health consequences" is an appalling euphemism when what is at stake is collective human survival. But the defining characteristic of doomsday machines, unlike natural disasters beyond our control, is that they are the products of human invention and human choices and thus they can be dismantled. In Dr. Strangelove, apocalypse was inevitable. In the real world, we face a threat, not a certainty.

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