

The Responsibility of Scientists

By Andrei Sakharov / 25 June, 1981

*The following essay was written for the International Conference in Honor of Andrei Sakharov, sponsored by the New York Academy of Sciences, the American Institute of Physics, and the American Physical Society at Rockefeller University, New York, on May 1, 1981.*

Because of the international nature of our profession, scientists form the one real worldwide community that exists today. There is no doubt about this with respect to the substance of science: Schrödinger's equation and the formula  $E = mc^2$  are equally valid on all continents. But the integration of the scientific community has inevitably progressed beyond narrow professional interests and now embraces a broad range of universal issues, including ethical questions. And I believe this trend should and will continue.

Scientists, engineers, and other specialists derive from their professional knowledge and the advantages of their occupations a broad and deep understanding of the potential benefits—but also the risks—entailed in the application of science and technology. They also develop an awareness of the positive and negative tendencies of progress generally, and its possible consequences.

Colossal opportunities exist for the application of recent advances in physics, chemistry, and biochemistry; technology and engineering; computer science; medicine and genetics; physiology and hygiene; microbiology (including industrial microbiology); industrial and agricultural management techniques; psychology; and other exact and social sciences. And we can anticipate more achievements to come. We all share the responsibility to work for the full realization of the results of scientific research in a world where most people's lives have become more difficult, where so many are threatened by hunger, premature illness, and untimely death.

But scientists and scholars cannot fail to think about the dangers stemming from uncontrolled progress, from unregulated industrial development, and especially from military applications of scientific achievements. There has been public discussion of topics related to scientific progress: nuclear power; the population explosion; genetic engineering; regulation of industry to protect the environment; protection of air quality, of flora and fauna, and of rivers, lakes, seas, and oceans;

the impact of mass media. Unfortunately, despite the urgent and serious nature of the issues at stake, such discussions are often uninformed, prejudiced, or politicized, and sometimes simply dishonest. Experts, therefore, are under an obligation to subject these problems to unbiased and searching examination, making all socially significant information available to the public in direct, firsthand form, and not just in filtered versions. The discussion of nuclear power, a subject of prime importance, is an instructive example. I have expressed elsewhere my opinion that the dangers of nuclear power have been exaggerated in the West, and that such distortion is harmful.