

LETTERS

HOW PHYSICS FOSTERED FREEDOM IN THE USSR

The discussion of aid to scientists from the former Soviet Union at the April APS meeting was very interesting and productive. It is easy to explain to physicists why they should support physics in the FSU. Physics is developed by the collective effort of physicists from many countries, and if the Soviet school of physics ceased to exist, that would be a blow to American physics as well. But another reason escaped general attention at the April meeting—a reason that not only physicists but also politicians should be aware of.

Physics and physicists played a very special role in the political life of the USSR. Biology, cybernetics and many other sciences were either crushed or not supported to the necessary extent during and after the Stalinist times. This did not happen with physics. Because of its importance for the development of the atomic bomb, physics was able to survive and develop, harmed to a much lesser degree by the dictatorship of official ideology. This circumstance gave rise to a very unusual phenomenon: The scientific culture associated with the Soviet school of physics became a culture of free political thought.

As a result, many leading dissidents in the USSR, such as Andrei Sakharov and Yuri Orlov, were physicists. Their role in the reorganization of the Soviet state is well known. Many physicists joined in the political activity and the fight for freedom in the years of *perestroika*. These people are well educated, and they are not afraid to make radical conclusions if they believe those conclusions are right. From their contacts with colleagues all over the world, they know much better than other people in the FSU the ways of development in Western society.

The process of political reconstruction in the FSU is not over yet, and the potential role of physicists should not be underestimated. There is no doubt that this process will produce many smart people who will quickly learn the basic principles of business.

But it would take generations to reproduce the culture of clear and independent thinking that gave rise to such people as Sakharov. It would be a political mistake to allow that culture to disappear.

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Computopia, Here We Come

N. David Mermin's Reference Frame column of May 1991 (page 9) advocated a formal electronic bulletin board system as a means of circumventing recognized inadequacies of journals. The printed responses (January, page 13) are primarily of sociological interest, as evidence of a professional community's unwillingness to abandon familiar but antiquated institutions whose demise has been under way for decades. The technological issues, although obscured by surprising levels of computer anxiety and ignorance, are already settled.

Theory. Several readers wondered about how refereeing and revisions would work under Mermin's scheme. The irrelevance of refereed journals to ongoing research in the elementary-particle theory community has long been recognized. At least since the mid-1970s, the preprint distribution system has been the primary means of communication of new research ideas and results. In this community we have learned to determine from the title and abstract (and occasionally the authors) whether we wish to read a paper, and to verify necessary results rather than rely on the alleged verification of overworked or otherwise careless referees (such as ourselves on bad days). The small amount of filtering provided by refereed journals plays no effective role in our research. As for revisions, a system that allows ongoing corrections or addenda is manifestly preferable to one that does not, and can easily be implemented to assure that

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