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Research Policy and the Peace Dividend

The dramatic changes in Eastern Europe have politicians and citizens in the United States looking forward to a "peace dividend." This will certainly occur, but whether it will be as large or come as soon as many expect is doubtful. A world in which there are many relatively smaller powers, each with its own nuclear weapons, may in a few years look even scarier than two big superpowers eyeing each other's overwhelming arsenals with caution. Nevertheless, the reduction of international tensions will clearly mean that money now devoted to defense can be assigned to other purposes. A good argument can be made for investing a significant fraction of these funds in fundamental research and planning.

The changes in Eastern Europe mean that the United States is now competing with a larger number of countries that are perfectly capable of mastering the advanced technology required for the manufacture of such products as automobiles, radios, television sets, and so forth. Moreover, some of these countries have far lower wage standards than the United States. It is unlikely that we can maintain the wage standards to which we have become accustomed by simply continuing to produce what other countries can produce just as well. Our best hope is to institutionalize our status as a source of innovative technology and basic research by an expansion of research in appropriate areas.

In addition, the United States has many internal problems, such as environmental deterioration, which could be alleviated through increased research. We cannot afford to let the environment worsen, and we must upgrade our long-range research into environmental problems (see *Science* editorial, 16 February, p. 777). The same is true of our energy reserves. The temporary lull in oil price increases is allowing us to slip back into old ways of waste, ways that will certainly cost us dearly in the years ahead. Basic research in energy devices and alternative sources must be vastly expanded. Thus, when other countries begin to face the same problems we are dealing with now, the United States will have the technology ready to help them.

New technologies and better economics in mass transportation, education, and the law will be needed in the next decade. At present, cities cannot afford to get rid of mass transit, and they cannot afford to keep it (see M. Wachs, *Science*, 30 June 1989, p. 1545). Part of this dilemma is caused by our willingness to consider it our right to build houses anywhere in a sprawling suburban area and then futilely hope that cars will not be used in preference to a transport system that adds an hour to the commuting time. Basic research in the proper deployment of subsidies and "commuter taxes" is desperately needed. Assimilating record numbers of immigrants will require new educational research. Devising a legal system that will keep up with modern science for both environmental and criminal cases will require new types of legal research.

Research should be the first serious use of the peace dividend. Our present policies seem to encourage us to build the house first, and then invite the architect to criticize it afterward. This approach has resulted in a housing scandal, a Medicare program that veers from excessive waste to excessive controls, and an educational system at which we are throwing money to no good effect. We now have the opportunity, perhaps rare in the history of our country; we can see this dividend approaching and can plan logically for its use. This will not be easy; there are always people with good intentions who will want to act quickly and think later. Good intentions are well known to lead into some pretty hot territories, and it will be terribly important for action to be preceded by the painstaking delineation of a program based on competent research. If we are careful, good intentions manifested as good research may be rewarded later by leadership in the design, manufacture, and sale of vital products in areas which others will consider essential, such as environmental protection and energy conservation.

Until the political shape of the new world emerges from the present revolutionary upheaval, neither the Soviet Union nor the United States is likely to dismantle its own military establishment completely. Nevertheless, there will be a big peace dividend sometime in the future. We should anticipate it by creating a smaller dividend now. The moment may be a perfect time to initiate a research structure that will set the basis for planning the expanded dividend in the future. That could benefit immensely not only our country but also the rest of the world.—DANIEL E. KOSHLAND, JR.