scientists and engineers well-versed in the legislative process. Both goals, Stine shows, were accomplished, along with unanticipated outcomes such as the development of a stronger science policy community and the regular cooperation of many scientific and engineering societies in an ongoing, high-profile project.

One issue that Stine documents, but I think downplays, is the "life cycle" of soft-money projects. Despite the clear value of the fellowship program to both the fellows and the Congress, funding has never been assured, for foundations and societies frequently move on to other interests. Of the forty-three societies, agencies, or consortiums that have sponsored fellows, only twenty had continued their support through 1994, and several of those were in the early years of their sponsorship—given the pattern demonstrated by other sponsors, some will eventually drop out again.

Although produced by a former fellow, and published by the sponsoring organization, this book avoids the dangers of internal institutional history. By linking the Congressional Science and Engineering Fellowship Program to broader social changes, and by taking a thematic rather than chronological approach, Stine sheds light on one aspect of the interaction of technology and culture.

BRUCE LEWENSTEIN

DR. LEWENSTEIN specializes in the history of science communication. In 1985 he was an AAAS Mass Media Fellow, in a program partially modeled on the one documented in this book.

Scientists and the State: Domestic Structures and the International Context. Edited by Etel Solingen. Ann Arbor: University of Michigan Press, 1994. Pp. xii + 259; tables, notes. $49.50.

The aim of this book is to analyze the impact of the various aspects of the modern state on the political economy of science. Editor Etel Solingen, assistant professor of political science at the University of California, Irvine, promises "a heavily comparative analytical flavor" (p. 3). Historians of science and technology will likely find this volume, like many studies by political scientists, both interesting and frustrating.

The outcome of a workshop held at UCLA in January 1990, the book consists of an introductory chapter by Solingen and nine case studies. These offer descriptions of the evolution of the scientist-state relationship by experts on science policy in the United States, France, Japan, China, the former Soviet Union, Brazil, Germany, India, and Israel. Solingen's comparative framework has two layers. The first she calls "state forms," which are defined by both the political system and the economic organization of a country. Thus, instead of the traditional dichotomy between liberal democracy and dictatorship, we have four state forms: pluralist market-oriented, noncompetitive

centrally planned, noncompetitive market-oriented, and pluralist centralized. The scientist-state relationship, as the second layer of the model, also has four "ideal types" (happy convergence, passive resistance, ritual confrontation, and deadly encounters), each linked to a particular state form.

The model, which Solingen acknowledges to consist of "analytic constructs more than empirical descriptions" (p. 15), is intriguing but, unfortunately, never put to serious test in the following chapters. Instead, contributors largely follow the development of their own case studies, with minimal reference to Solingen's model or to each other's conclusions. Most of the case studies focus on the period following World War II. The topics covered include the evolution of scientific institutions, reasons for state funding of science and technology, and the changing scientist-state relationship. Most authors also try to forecast trends and even to prescribe a few lessons from the past for today's scientists and policy makers. Not surprisingly, given the Cold War context, nuclear and space sciences and technology occupy prominent places in these stories. Although specialists will probably find little new information in these papers, which are mostly based on published works, there are provocative observations that provide food for thought.

Some of the authors' assertions cry out for in-depth comparison among the case studies. In his thoughtful review of the postwar government-science relationship in the United States, for example, Bruce L. R. Smith states that "even more than other democracies, the United States has been open to scientists' involvement in the workings of the governing system in broad policy areas" (p. 33). In another well-written chapter on the French case, Frank R. Baumgartner and David Wilsford argue that "the relationship between scientists and the state in France is more intimate than in any other advanced industrial democracy, save perhaps Japan" (p. 70). How fascinating it would be to see the authors debate their conclusions, but unfortunately the book does not contain any record of the discussions that presumably took place at the workshop.

The inclusion of three developing countries (China, Brazil, and India) among the case studies is refreshing and adds new dimensions. These studies suggest problems in generalizing from models based on experiences of developed countries. Ashok Kapur's examination of the relations between nuclear scientists and politicians in India, for example, leads him to emphasize key personalities instead of a coherent scientific community. Wendy Friedman, in her nuanced account of the Chinese experiences, also speaks of many scientific communities. The lack of raw data, however, prevents her from developing her analysis beyond the most general level. One can only hope that the trend of the last few years, which saw the publication in China of a three-volume history of the Chinese Academy of Sciences

and the memoirs of several key science policy makers, will continue and that more archival sources will be open for scholarly research.

There is no doubt that the book addresses a topic of major concern to historians of recent science and technology. Both its successes and its shortcomings argue for a more serious integration of historical and other approaches if we are to do more than pay lip service to "comparative studies."

ZUOYUE WANG

DR. WANG recently completed his dissertation on "American Science and the Cold War: The Rise of the U.S. President's Science Advisory Committee" at the University of California, Santa Barbara, and is working on a history of U.S.-China scientific exchanges.