handy to nonspecialists, who may not have the time, wish, or opportunity to track down Seilacher’s original publications (some of which are in hard-to-find volumes). Non-specialists should, however, keep in mind that such are the communicative powers of Seilacher’s drawings and text that one can easily forget that these are interpretations—albeit ingenious ones and probably more often than not correct. This stimulating book documents the wonders that can be achieved by the eye and pen of a fertile mind.

References

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SCIENCE POLICY

What Can Science Do for the President?

Gregory A. Good

Consider a tale of two United States presidents and their approaches to science policy advice. The first preferred advisers who honestly disagreed with him and with each other, but who advised him with the best interests of the country at heart. The second preferred advisers who told him what he wanted to hear. The first preferred advisers who were skeptical of technological fixes; the second, advisers who thought technology could answer most challenges. The first preferred advisers with backgrounds in academia; the second, advisers from industry. The first president doubted the advice of ideologues and religionists; the second used their advice to form science policy on issue after issue. The first respected free and open debate; the second formed policy behind closed doors and presented carefully censored reports to the public.

The second U.S. president above is clearly George W. Bush. Readers may be surprised, however, to find that the first is General Dwight David Eisenhower, who in 1957 established the President’s Science Advisory Committee (PSAC).

Zuoyue Wang’s In Sputnik’s Shadow: The President’s Science Advisory Committee and Cold War America reminds us in rich detail of various ways in which U.S. presidents, especially in the mid- and late 20th century, have obtained advice on science. Wang (a historian at California State Polytechnic University, Pomona) focuses on the period from the Eisenhower administration to that of Richard Nixon but glances backward and forward. Despite these glances, his book is neither a prescription nor a diatribe but rather a careful and nuanced historical analysis. Readers looking for simple answers to where American science policy should go next need to look elsewhere. In Wang’s book they will instead find a fully developed and complex historical analysis.

Eisenhower created PSAC in the midst of the Cold War, soon after the Soviet Union’s October 1957 launch of Sputnik. Eisenhower charged the committee with advising him mainly on science and technology relevant to defense and nuclear weapons—or more to the point, relevant to arms control. Presidents before Eisenhower had sought advice from scientists, through either the National Academy of Sciences or ad hoc arrangements, but PSAC was intended to regularize the process. In addition, during World War II the Office of Scientific Research and Development, the Radiation Lab, and the Manhattan Project had fundamentally altered the culture of physics in the United States.

A recurrent theme throughout the book concerns the dual nature of science in American politics: science in policy versus policy for science. This seemingly cryptic phrase has a simple, direct meaning. Presidents realize that to forge policies regarding defense, energy, etc., government needs competent advice about science and technology, and PSAC provided such expert advice. Scientists have another interest, namely the funding and promotion of their research and their institutions. As Wang encapsulates the distinction: what can science do for the government versus what can government do for science? PSAC scientists recognized that these two perspectives are inextricably linked, and committee members often linked the country’s policy interests with the self-interest of their science. Aware of the distinction, Wang narrates many efforts of PSAC to “blur the boundary.”

Wang also emphasizes the balance that PSAC scientists tried to maintain between technological enthusiasm and technological skepticism. They consistently included technological limitations, environmental and social risks, and policy implications in their analyses—as in those regarding nuclear-powered airplanes, the supersonic transport, antiballistic missiles (ABM), and pesticide use. Wang notes “theirs was not an argument against technology, but one for appropriate technology, for a broadened concept of technological rationality that encouraged technological development not for its own sake but for its benefits in achieving social, political, cultural, and economic goals in a democratic society.”

The demise of PSAC came during the Nixon years, in large part through tensions magnified by the ABM debate. Nixon first distanced himself from his science adviser, Lee DuBridge, and ultimately, just weeks after the 1972 election, decided to dissolve the Office of Science and Technology and with it the committee. The decision then took six months to be finalized. As Wang suggests, PSAC’s closing occurred at least in part because Nixon did not want the broader technological rationality that previous presidents had favored. He resented disagreement from his advisers.

Wang provides the scientific community and policy-makers with a most timely reminder of the positive roles that scientists can play in an open society. We can only hope that Barack Obama will turn a page and not let ideology, personal beliefs, or party politics interfere with his seeking of sound science advisement. In Sputnik’s Shadow offers a history that both policy-makers and scientists should heed well.

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