

Zeynep Pamuk. *Politics and Expertise: How to Use Science in a Democratic Society*. Princeton University Press, 2021. 256 pages. \$45.00 cloth.

How can modern democratic societies draw insights from scientists and science to improve public policy without taking away citizens' rights to participate? A decades-long literature that spans disciplines and subfields has wrestled with this question, frequently showing how efforts to “rationalize” policy making through use of science instead sparks protracted controversies and stalled policy efforts (e.g., Collingridge and Reeve 1986; Kagan 1991; Nelkin 1995; Primack and von Hippel 1974). In her recent book *Politics and Expertise: How to Use Science in a Democratic Society*, Zeynep Pamuk selectively engages with relevant literature to argue that science—which is inescapably biased—undermines equal participation of citizens in democratic decision-making. Asserting that science has a direct, unfiltered impact on public policy, Pamuk sets out to convince the reader that allocating public dollars for science by lottery and debating scientific claims through a citizen-initiated science court will offer meaningful checks on the otherwise undemocratic influence of scientists in policy processes.

Pamuk begins by arguing that scientists and the science they conduct are not neutral. She points out that entirely neutral science is not desirable given that neutrality with respect to outcomes would make science irrelevant in policy debates. Pamuk considers and rejects the idea that scientists

can be made to be representative. Advisory committees are too small to generate actual representation. Moreover, when committees are composed, does one even know which interests need to be represented? From this brief consideration, Pamuk concludes two things: (1) Science directly shapes policy outcomes, and (2) science is subject to no effective mechanisms of democratic accountability.

To establish this claim, Pamuk relies on a smattering of cases where scientists convinced policy makers to act on slim evidence or faulty assumptions. In one example from the United States, Pamuk points to a 1976 effort to vaccinate the public against a pandemic that never emerged. Showing that scientists can influence policy in situations where they lack evidence to support their recommendations is far from establishing that this is the norm. For example, it takes the US Environmental Protection Agency an average of four years to prepare science assessments that stakeholders can agree on before the agency can even propose a new regulatory rule. This multiyear process of vetting the science that might shape policy outcomes exists so antagonists can advance their own versions of good science and expose bias in accounts they find wanting.

Pursuing the idea that there are no meaningful controls over the use of science in policy making, Pamuk writes, "The principal-agent framework commonly used to analyze the relationship between bureaucracies and legislatures does not apply straightforwardly to scientists either. Scientists are not the agents of politicians or the public, except when they take up certain advisory offices. Even then, they remain highly independent actors constrained mainly by professional incentives and norms" (18). Pamuk does not seem to realize that scientists play a role in shaping policy not just as advisors but also as federal employees. In this role, they are the very civil servants treated in principal-agent analyses. Their professional standing as scientists, far from insulating them from political oversight, might actually attract it. Since legislatures delegate significant policy-making responsibilities to state and federal agencies, the failure to address the variety of mechanisms of democratic accountability that apply to civil servants is no small error.

There is also a tendency in *Politics and Expertise* to mischaracterize relevant and related scholarship. In one instance, Pamuk criticizes science, technology, and society (STS) scholarship for what she claims is its failure to take an institutional approach (15). As if to back up her claim, she cites Jasanoff's *The Fifth Branch* (1990). This is one of the most influential works in STS. It advertises its decidedly institutional approach right there in the title.

Later, Pamuk writes, “The possibility of neutral and reliable expertise has defined theories about the relationship between experts and politics, while the myriad ways in which experts fall short of the ideal in practice have not fundamentally altered our thinking about the problem” (185). This is a surprising claim given that the entire field of STS takes as its point of departure that scientists are not neutral participants. Moreover, the historical trend in the actual design of science funding and science advice in policy making over the past 70-odd years in the United States has been to increase democratic participation and accountability. This trend is driven by the longstanding recognition of the non-neutrality of scientists (Gerth and Mills 1946; Hilgartner 2000; Ravetz 1999; Stone 1997).

By asserting that there are no effective mechanisms in use for holding science accountable, Pamuk sets the bar artificially low. Pamuk then offers two solutions that, in her view, will improve the democratic accountability of science advice. The first is to replace our current system of science funding with a lottery. Pamuk argues that relying on scientists to rank the quality of proposals stifles critical, original work in favor of scientists’ preferred paradigms (158). Pamuk argues that a lottery “would constitute a significant improvement in the chances of unusual or high-risk proposals” receiving funding (158).

Pamuk addresses Vannevar Bush’s 1945 proposal in which he promised national security, economic growth, and medical advancement in exchange for the delegation of research funding decisions to scientists. Concerned about what she perceives as a lack of democratic control over federally funded science, Pamuk overlooks that our present moment bears little if any resemblance to the 1940s. For instance, social pressure to diversify college and graduate student admissions—an effort that is by no means complete—has changed who participates in the sciences and meaningfully expanded the relevance of scientific inquiry to communities excluded for much of the 20th century. From reforms instituting human subject protections and informed consent to research strategies like community-based participatory research, new practices have altered the relative power of researchers and research subjects. For their part, scientific journals have made a concerted effort to weed out conflicted science by requiring disclosure of funding sources and other potential researcher conflicts that are likely to bias science and science advice.

A steady stream of scholarship, also overlooked by Pamuk, addresses these transformations. For example, David Guston’s *Between Politics and Science* (2000) shows a substantial increase in congressional oversight of science funding. Stephen Epstein’s book *Impure Science* (1996) documents

the role of AIDS activism in driving “a revolution in the democratization of medicine” (Goldberg 1997) and underscores its profound effect on the policies and performance of US agencies such as the Food and Drug Administration, the National Institutes of Health, and the Centers for Disease Control and Prevention. The success of AIDS activists sparked widespread patient activism (e.g., Armstrong, Carpenter, and Hojanki 2006; Best 2012), including the successful institutionalization of one of that movement’s central goals: deepening citizen engagement in the production of research intended to inform medical decision-making (Keller et al. 2019). The work of democratizing science used for policy is hardly complete. However, asking if a lottery would be an improvement over a circa 1945 vision of science funding does not help us understand what the next steps in this process of democratic transformation might be.

Pamuk’s second solution is to create a citizen-led science court. Citizens would initiate the process by placing a science-relevant policy question before the court and selecting scientists to argue the initiators’ preferred side of the argument. An unnamed group of professionals would choose scientists to argue the other side. After listening to scientists present pro and con arguments, a randomly selected jury would decide which position to endorse.

Pamuk argues for the citizen-initiated science court because of its potential to increase popular sovereignty in policy making. The proposed court would give citizens control over the agenda, that is, determining which cases come before the court and how the questions the court considers are framed (113) as well as over the outcome via the jury’s decision (115). Pamuk argues that policy makers should view a jury decision as the equivalent to that of a science advisory committee and that it should “have a direct advisory influence over policymakers” (123). Later, she focuses on the courts’ role in shaping public opinion, arguing that, when aligned with a minority view, “the court decision would challenge the majority and push citizens to rethink their views” (127).

There are several reasons to wonder if Pamuk’s science court would function as she describes. First is the substantial literature demonstrating that, if the ends are politically contested, the means can be expected to become part of the controversy (e.g., Gieryn 1983; Jasanoff 1990). Many features of Pamuk’s proposed science court—such as the choice of scientists to argue before the jury—would instantly become the focus of concerted political contests (112–15).

Assuming such battles would not indefinitely delay the proceedings, one might wonder if her “two sides” approach would misrepresent science.

How would Pamuk's science court treat issues such as tobacco use, climate change, or COVID-19 vaccination? Would scientists be forced to argue that tobacco is not harmful in Pamuk's science court to meet her requirement for scientists to argue each side? In many cases, one can find scientists to argue publicly against a prevailing expert consensus. Less clear is whether one could find any such scientists whose positions were not linked to corporate funding (McGarrity and Wagner 2008; Oreskes and Conway 2011). Moreover, knowing that the "two sides" approach misrepresented the extraordinary level of consensus among scientists about climate change, one might ask if it is possible to pursue the goal of elucidating potential bias in science without also misleading the public about the degree of consensus within the scientific community.

In the book's epilogue, Pamuk reveals that her interest in bias among scientists might be particular rather than general, arguing that scientists are so liberal that "alternative political viewpoints [cannot] be adequately represented in scientific advice" (199). To illustrate, she provides the example of public health professionals who, through an open letter with more than 1,000 signatories, argued that Black Lives Matter protests should not be curtailed because of the risk of COVID-19 transmission (Simon 2020). The example is notable for the fact that the letter is clear about the values that shape the signatories' position. Moreover, with access to the names of the signatories and their institutional affiliations, motivated individuals can learn more about each one: where they were trained, their publication records, their funders, their conference presentations, and so on. There is nothing to suggest that Pamuk's science court would offer the public more timely insight into these experts' potential biases than the signatories themselves provided. Nor does the publication of such a letter reveal that biased experts are influencing public policy. Although Pamuk decries a presumed direct influence of experts on public policy, her examples during COVID-19 demonstrate the opposite: Many communities and elected officials responded to expert recommendations by rejecting them entirely.

In the 21st century, elected officials must grapple with increasingly complex issues of science and technology. In this environment, the threat of technocracy looms. At the same time, growing partisanship, hyperpolarization, and social media-fueled misinformation have placed democratic systems under substantial pressure. These dynamics suggest there is room for scholars to take a fresh look at the problem of how to use science in a democracy. Unfortunately, Pamuk's lack of engagement with relevant literature and lack of systematic treatment of empirical evidence make for unsatisfying reading.

As the bipartisanship around federally funded science that characterized 20th century science fades, scholars might want to assess the impacts on federal science budgets and funding strategies. Equally, what might agency policy making look like as hyperpartisanship erodes the civil service protections put into place during the Progressive Era? Both federal funding for scientific research and government employment of scientists are longstanding institutions that provide Americans with a source of unconflicted science. That is not the same thing as saying that publicly funded or employed scientists are unbiased or free from error. However, technocracy can also result from the unchecked influence of privately funded science.

In the United States, elected officials have always shaped public expenditures on scientific research and wielded considerable influence over scientists' role in policy making. As a result of 20th century reforms, citizens increasingly participate in these processes. What that looks like under our current polarization, hyperpartisanship, and populism, however, should motivate a new generation of scholars.

—Ann C. Keller, University of California, Berkeley

DOI 10.1215/03616878-11862687

■ ■ ■

Ann C. Keller is an associate professor of health politics and policy with the School of Public Health at the University of California, Berkeley. Focusing on issues in health care, public health, emerging technologies, and the environment, she studies controversies surrounding the use of science and expertise. Her book *Science in Environmental Policy: The Politics of Objective Advice* won the 2011 Don K. Price Award from the American Political Science Association for the best book in science and technology politics. She is the recipient of multiple National Science Foundation awards funding research on topics such as pandemic response and regulation of CRISPR/Cas-9 and autonomous vehicle technologies.
annk@berkeley.edu

References

- Armstrong, Elizabeth M., Daniel P. Carpenter, and Marie Hojnacki. 2006. "Whose Deaths Matter? Mortality, Advocacy, and Attention to Disease in the Mass Media." *Journal of Health Politics, Policy and Law* 31, no. 4: 729–72.

- Best, Rachel K. 2012. "Disease Politics and Medical Research Funding: Three Ways Advocacy Shapes Policy." *American Sociological Review* 77, no. 5: 780–803.
- Collingridge, David, and Colin Reeve. 1986. *Science Speaks to Power: The Role of Experts in Policy Making*. St. Martin's Press.
- Epstein, Steven. 1996. *Impure Science: AIDS, Activism, and the Politics of Knowledge*. University of California Press.
- Gerth, Hans, and C. Wright Mills, eds. 1946. *From Max Weber: Essays in Sociology*. Routledge.
- Gieryn, Thomas. 1983. "Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists." *American Sociological Review* 48, no. 6: 781–95.
- Goldberg, Jeffrey. 1997. "Breakthrough." *New York Times Book Review*, January 12.
- Guston, David. 2000. *Between Politics and Science: Assuring the Integrity and Productivity of Research*. Cambridge University Press.
- Hilgartner, Stephen. 2000. *Science on Stage: Expert Advice as Public Drama*. Stanford University Press.
- Jananoff, Sheila. 1990. *The Fifth Branch: Science Advisers as Policymakers*. Harvard University Press.
- Kagan, Robert. 1991. *Adversarial Legalism: The American Way of Law*. Harvard University Press.
- Keller, Ann, Robin Flagg, Justin Keller, and Suhasini Ravi. 2019. "Impossible Politics? PCORI and the Search for Publicly Funded Comparative Effectiveness Research in the United States." *Journal of Health Politics, Policy and Law* 44, no. 2: 221–65.
- McGarity, Thomas, and Wendy Wagner. 2008. *Bending Science: How Special Interests Corrupt Public Health Research*. Harvard University Press.
- Nelkin, Dorothy. 1995. "Science Controversies: The Dynamics of Public Disputes in the United States." In *Handbook of Science and Technology Studies*, edited by Ulrike Felt, Rayvon Fouché, Clark A. Miller, and Laurel Smith-Doerr. MIT Press.
- Oreskes, Naomi, and Erik Conway. 2011. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*. Bloomsbury.
- Primack, Joel, and Frank von Hippel. 1974. *Advice and Dissent: Scientists in the Political Arena*. Basic Books.
- Ravetz, Jerome. 1999. "What Is Post-Normal Science?" *Futures* 31, 647–53.
- Simon, Mallory. 2020. "Over 1,000 Health Professionals Sign a Letter Saying, Don't Shut Down Protests Using Coronavirus Concerns as an Excuse." CNN, June 5. <https://www.cnn.com/2020/06/05/health/health-care-open-letter-protests-coronavirus-trnd/index.html>.
- Stone, Deborah. 1997. *Policy Paradox: The Art of Political Decision Making*. W. W. Norton.